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ASSOCIATION CANADIENNE DES PROFESSEURS D'UNIVERSITÉ

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Tom McDonald



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# LETTERS LETTRES

## Sent to Siberia

As one who teaches a course on totalitarianism, including both National Socialism (Nazism) and Marxist-Leninist socialism, I was appalled by the letter from Lee Lorch (CAUT Bulletin, October 1982). Lorch appears hostile on principle to the publication of any realistic account of life under the Soviet dictatorship, on the ground that such accounts tend to justify a continued commitment to the military defence of the West.

The lack of academic freedom in the Soviet Union must surely be obvious to anybody who does not deliberately shut his eyes. In his book *The New Russian Tragedy*, Anatole Shub described the early difficulties of a young historian, the late Andrei Amalrik: "At Moscow University, he produced a dissertation which showed that many of the cultural glories of nineteenth-century Russian Russia had not been immaculately conceived, through the unique genius of the Slavs, but came directly from the higher civilization at Byzantium. The Party line was just the reverse. . . . The professor declined to approve the dissertation. Andrei protested - and was expelled from the university."

Later, when Amalrik began associating with other people of independent views, the KGB had him sent to Siberia.

At one point in his letter Lorch seems to be attempting to create an impression that the losses suffered by the Soviet Union in the Second World War were incurred in defence of Jews. In reality these losses are entirely irrelevant to the record of Soviet anti-Semitism. Moscow was in league with the Nazis from 1939 to 1941. The Soviet regime fought Germany later only because the Nazis doublecrossed their Communist partners and invaded the USSR.

If Lorch wants to conduct a crusade against the defence of the West, he should argue his case without trying to conceal the ugliness of Soviet socialism.

Kenneth H. W. Hilborn,  
Dept. of History,  
University of Western Ontario

## Means nothing

The Commentary by Mary Jane Miller and Jack Martin Miller on the problems of Communication in the Humanities (CAUT Bulletin, September, 1982) contains one striking demonstration of those problems. I refer to their final sentence in which they write of "the Renaissance tradition of *communis scolaris*." Although I am aware of the "tradition" to which they refer, as one who claims familiarity with the Latin language and its history as a medium of scholarly communication, I am constrained to point out that the italicized phrase as it appears in the Bulletin means nothing in Latin nor, as far as I know, in any other language.

Rory B. Egan,  
Department of Classics,  
University of Manitoba.

## Nostalgia buff

As a nostalgia buff, I want to thank you for the academic radical chic of the September issue. Professor Cantelon's letter took us back to the balmy days of the 30's, when the extermination of millions of political prisoners in the Soviet Union was thought to be balanced by a couple of Com-

munist intellectuals or artists who may have lost their jobs in North America.

In view of the number of people who have risked death to escape from the Soviet Union and its political kin, Professor Cantelon's implication that Canadian students would be pleased to accept the Soviet system is particularly funny. Unfortunately, Solzhenitsyn and thousands of other refugees from the USSR, as well as such events as the suppression of the Moscow Helsinki monitoring group, have ruined this game for most of us.

Professor Cantelon's letter was a wonderful appetizer, but special thanks must be tendered for the main course provided by Dr. J.F. Conway. I was charmed by the image of Canada as "incapable of feeding, clothing and caring for all her peo-

ple" (etc.); one wonders why this terrible place has to turn down many thousands of would-be immigrants from all parts of the earth every year. Could anyone infer from Dr. Conway's diatribe that in reality this is one of the few countries in the world where the average person, even in these economically depressed times, has a higher standard of living, better health care, and more opportunities for education, recreation, and a rich life than has ever been the case for even elite members of most societies?

Further, in the remarks about relying on force and fear and smashing dissent, it is difficult to recognize the Canada that we actually live in, where every range of opi-

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# Science for Peace

## OBJECTIVES

- to conduct and encourage educational and research activities relating to the dangers of war waged with weapons of mass destruction, especially nuclear weapons;
- to encourage scientific activities directed towards peace, and to urge the publication and dissemination of the findings of peace research;
- to do all things incidental or conducive to the attainment of these objectives.

SCIENCE FOR PEACE is a national organization presently centered in Toronto, with Chapters in Vancouver and Halifax. Our purpose is to provide the public with factual information about the dangers and likely outcome of nuclear war, to monitor destabilizing developments in the arms race, and to offer expert advice on these issues to decision makers.

Members include scientists (social and human as well as physical) engineers and others, who are encouraged to form local Chapters to organize educational and research activities. The Secretariat co-ordinates such activities nationally, administers the finances, and produces and distributes a news bulletin. The Board of Directors determines national policy of Science for Peace.

Examples of our initiatives include: foundation of a chair of peace studies at the University of Toronto; work towards an international satellite monitoring agency; studies in technical aspects of cruise missile systems, monitoring of underground nuclear tests, chemical weapons, environmental modification and militarization of space.

## INVITATION

- to become a member of Science for Peace: we need your time and energies to carry out our task;
- to make a financial contribution to support our educational and research activities.

Application has been made for recognition as a charitable organization: CHEQUES: Make out to SCIENCE FOR PEACE.

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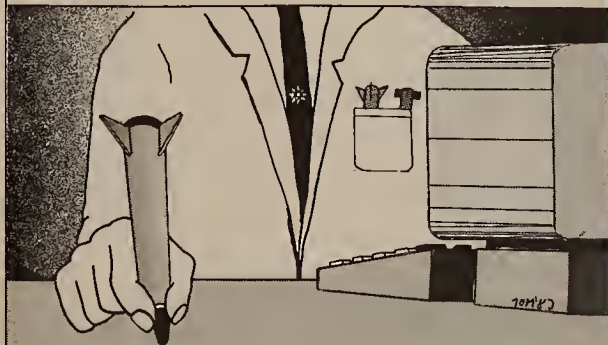
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## Commentary

# Scientists, the arms race and disarmament

by Eric Fawcett



Tom McDonald

"The arms race is primarily the product of political forces. But scientists themselves contribute to this disastrous trend in world affairs. About half a million scientists and technologists — a high proportion of the total scientific manpower — are directly employed on military research and development. They are continually devising new means of destruction, making the existence of the human species on this planet ever more precarious..."

"This role of scientists is contrary to their traditional calling. The objectives of scientific endeavour should be service to mankind, helping to better the fate of man and raise material and cultural standards. The basic unmet needs of a majority of the people in the world present a challenge great enough to warrant a huge and sustained effort by scientists. For an enormous effort of scientists to be instead directed towards wholesale destruction, to return to a state of primitive savagery among the survivors of a nuclear war, is an unforgivable perversion of science."

Pugwash/UNESCO Symposium, Corsica, 1982\*

The Russell-Einstein Manifesto was proclaimed in 1955 and resulted in the series of Pugwash Conferences on Science and World Affairs, which have made valuable contributions to international negotiations on arms control. Yet, as 1983 approaches, the threat of massive nuclear war looms larger than ever before. There is an urgent need for all scientists, for academics and for professionals to help in stopping the arms race. It is no longer enough for a small number of dedicated scientists and others to work towards disarmament — it is the duty of all to become aware of these issues, and many scientists in all countries through their specialized knowledge have a responsibility to take action.

There is evidence of increasing awareness among scientists of this responsibility to address the danger of nuclear war. In May 1982, the International Council of Scientific

Unions, a major non-governmental scientific organization comprising leading scientific organizations of more than 70 countries, issued an appeal to participants in the second special session of the U.N. General Assembly to make every effort to save mankind from the threat to its very existence. On April 27, 1982, the National Academy of Sciences (USA) issued a resolution on Nuclear War and Arms Control, which was endorsed by the Royal Society of Canada at its annual meeting in June 1982. A statement deploring the dangerous situation of the world was issued by the Academy of Sciences of the USSR on May



## St. Francis Xavier University Department of Nutrition and Consumer Studies

The Department of Nutrition and Consumer Studies at St. Francis Xavier University invites applications for an academic position in Consumer Studies effective September 1, 1983.

Responsibilities will include giving leadership in expanding the undergraduate program in Consumer Studies, and in teaching courses in this area.

Minimum educational requirements M.Sc., Ph.D. preferred. Salary commensurate with qualifications and experience. Applications will be received until position is filled. Canadian immigration regulations require the university to assess applications from Canadian citizens and landed immigrants before considering foreign applicants. Position is subject to budgetary and Senate approval.

Applicants should send a curriculum vitae, transcripts and names of three references to:

Dr. Helen Aboud  
Chairman, Department of  
Nutrition and Consumer Studies  
St. Francis Xavier University  
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B2G 1C0

13, 1982. The European Physical Society, an association of physicists with membership in both East and West Europe, in June 1982 called upon statesmen engaged in the Geneva talks on arms control to bring an end to the arms race and urged governments of the world to find peaceful means for the settlement of all disputes between them.

Such appeals and resolutions seem, however, to have had little effect, and insofar as they are a substitute for action they may be worse than useless. The crying need is for scientists to pay more than lip-service to the need to avert the catastrophe of nuclear war. We must take positive action and devote a significant part of our time and energies to this task.

In Canada there are two national organizations, Science for Peace (see notice on opposite page) and Physicians for

Social Responsibility, dedicated to mobilizing scientists and helping them to work towards peace and disarmament. Other national organizations such as Project Ploughshares, and numerous local organizations having the same purpose, are directed towards a wider membership. An individual effort may be more appealing to some, but it is difficult to make progress without some measure of interaction and exchange of ideas, which is normal in other areas of scientific activity.

The participants in the Pugwash/UNESCO Symposium recommended, among others, the following specific tasks for scientists:

☐ to study technological aspects of the arms race so as to be able to offer expert advice to decision makers, and to address lay-audiences and the mass media to provide them with factual information about the dangers and likely outcomes of nuclear war;

☐ to support efforts to limit and eventually stop and reverse the arms race, and in particular to monitor destabilizing developments;

☐ to influence scientific academies and institutions to induce them to devote some of their activities and budgets towards these issues;

☐ to maintain contact between scientists from different social and economic systems, and to participate in national and international meetings to discuss these issues;

☐ to promote disarmament education and the inclusion of these issues in the curricula of schools and universities.

The last document signed by Albert Einstein before his death was the Russell-Einstein Manifesto. Are we, who revere Einstein as a great scientist and humanist, willing to dedicate, as he did throughout his career, a significant part of our working lives to addressing the threat of war, now more terrible than ever before?

\*The proceedings of the Pugwash/UNESCO Symposium have been published by UNESCO under the title *Scientists, the Arms Race and Disarmament*, edited by Joseph Rotblat, distributed by Renouf, \$57.00. The Conclusions and Recommendations of the Symposium appear on page 18 of *The Bulletin*.

The *Bulletin* invites readers to submit articles of opinion or analysis of approximately 800 words in length.

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Professor Fawcett is the President of Science for Peace.

# LETTERS LETTRES

nion from the Trotskyite to the neo-Nazi is openly promulgated. Compare this with the vast majority of countries where even mild political unorthodoxy can be fatal, or at least dangerous to one's welfare and health. Best of all was Professor Conway's daring phrase: "There, I have finally said it. Socialism." I can picture his students looking around fearfully for the Cossacks! One would never think that Canada has a well-established (although not extremely popular) Socialist party, which freely and legally participates in all aspects of our political life. Anyone who takes Professor Conway's remarks seriously might wonder at this ruthless and unjust society supporting him in what is no doubt reasonable comfort while he utters his dangerous heresies; obviously, the "devious and foul methods usually associated with police states" have failed somewhere along the line.

Once again, thank you for the trip into the past. I hope and trust that these will not be the last such entertaining contributions to appear in the *Bulletin*.

Peter Suedfeld  
Department of Psychology  
The University of British Columbia

## Destructive approach

J. F. Conway (*Bulletin*, September 1982) has published an attack on Canada that leaves me astonished. Following squarely in the tradition of the American intellectual elite, he has attacked every institution of his country, painting a picture less of an advanced liberal democracy than of a banana republic or an East European dictatorship. Canada, a country of civil liberties second to none, which has provided a high standard of living for its people (which Conway scorns as "barbaric"); where elections are free and secret as they are in no "socialist" country; — all this he dismisses with a wave of the hand, describing the country as one "deliberately designed to perpetuate greater poverty and injustice in some regions . . ." (emphasis added).

In the same short essay he manages to dispose of Sir John A. MacDonald, Abraham Lincoln, and Benjamin Disraeli — no mean feat.

Canada has many problems, and they need discussion. But I hardly imagine that this discussion will be aided by the destructive and hate-filled approach taken by Conway.

I feel sure the *Bulletin* is capable of making a greater contribution than this to the discussion of Canada today.

Philip H. Smith, Jr.,  
University of Waterloo

## Professor Conway replies:

Professors Smith and Suedfeld epitomize the smug arrogance and carefully cultivated ignorance of many of the well-to-do in our nation.

To Professor Smith I would express my own astonishment at his lack of knowledge not only of Canadian history, but even of the recent findings of the McDonald Commission. I would also suggest that my piece was hope-filled, not hate-filled. Finally, I would remind him that I did not say that Canada's standard of living is barbaric. Rather, I suggested that boasts about that standard of living, such as those of the two professors, were barbaric in a world where most of humanity "still must worry about a meagre portion of daily bread."

Professor Suedfeld leaves me almost speechless, no mean feat. First, his ig-

norance about the terrible problems faced by so many in our society is clearly lying. His sophomoric effort at satire and irony is almost macabre. There is really no answer, short of a series of articles on Canada's social problems, that would suffice. Second, he reminds me of my mother who used to warn me about biting the hand that feeds me. She also used to tell me how lucky we all are now compared to the horrors of the Great Depression. From time to time she would also contrast our easy affluence with the plight of the wretched and hungry of Asia and Africa. But, alas, for Professor Suedfeld, history marches on and yesterday's affluence becomes today's poverty, and, indeed, yesterday's grateful immigrant becomes today's malcontent.

Yes, I do realize that if I were in El Salvador the death squads would have long since paid me a visit. And, if I were in Poland I would most certainly not be teaching at a University. However, I happen to live in Canada, a country where many share neither Professor Suedfeld's levity about the sinister activities of our political police, nor Professor Smith's happy innocence.

My article was based on the notes for my last lecture in a course at Edinburgh which ranged a full academic year. I only regret that my two colleagues did not have the opportunity to take the course. Upon request, I would be happy to send them a copy of the outline for some independent reading.

## So lavish

The *Globe and Mail* (25 September 82, p. 4) reports that Dr. E. Clark, a civil servant who played a key role in developing the national energy policy, is to receive an estimated income of up to \$172,000 (including, among other things, overseas adjustments, educational expenses for his children and a housing allowance) for his 'sabbatical' in Paris and that he compares this to a university sabbatical, saying that if he had been "reading books in a library at the same cost, there wouldn't be any trouble at all".

Quite apart from doubts about the length and merits of Dr. Clark's service to the economy of our country, can your readers suggest any Canadian university that would grant sabbatical leave even to a senior professor on terms anything like so lavish?

C. J. G. Turner,  
Dept. of Slavonic Studies,  
The University of  
British Columbia

## Change, not sympathy

Re: "Support for foreign students", page 7, October issue. The exchange printed between Flora McDonald and Lloyd Axworthy is unfortunately putting things in a slightly rosier light than is warranted. As CAUT knows, the Minister has consistently refused to consider relaxing employment restrictions on international students. His statement to the Committee on Labour, Manpower and Immigration was rather ambiguous, because he did not directly address Ms. McDonald's point; that at least one university, in this case Queen's, would like to employ international students within the university in activities supported by student fees, which the international students pay. Mr. Axworthy stated that the choice of an international student on campus for a job not related to his or her studies was the university's; in fact, it is not, under existing regulations. Officers in Mr. Axworthy's Ministry are

acutely aware of the problems faced by many international students, but can do little in this particular area without his explicit authorization.

A change in the regulations is called for, not expressions of sympathy.

George Tillman,  
Director,  
Foreign Student Affairs,  
Canadian Bureau for  
International Education

## Absurd and erroneous

I do not intend to take up the defence of Dr. B. Schein (see his "Red Tape, Rules, and Repression," *CAUT Bulletin*, April 1982) from his Canadian critics (*CAUT Bulletin*, September 1982). He has done this excellently himself in the same September issue. I should like, however, to dwell briefly on some of the absurd or simply factually erroneous statements in his critics' letters, which remained untouched in Dr. Schein's response.

Both Canadian professors, Pruitt and Cantelon, think that the fact that they have had no difficulties in correspondence with a small group of Soviet scholars is some evidence of academic freedom in the USSR. Don't they understand the basic mechanisms of a centralized totalitarian state, where such contacts are deliberately organized and maintained by order, or where simply a certain contact is considered desirable by and for the CP apparatus (be it its scientific or pure propaganda establishments) and, although perhaps originating genuinely as a result of human contacts, it is then maintained by instruc-

tion to the given Soviet academic? I should advise both your correspondents to read Leys' *Chinese Shadows* on the Chinese communist technology of such operations if they are not convinced by the Solzhenitsyn account of the visit of Mrs. Roosevelt to a Soviet prison, for instance (*The First Circle*).

The compulsory courses at Canadian universities Mr. Cantelon mentions have nothing in common with the deliberately ideological subjects that make up approximately 33 percent of the compulsory load of disciplines in Soviet science faculties, while making up nearly 100 percent of the subjects in the faculties of social sciences.

An economics course which, according to Mr. Cantelon, ignores Marxism may in actual fact be compared with the regular Soviet economics courses at best, not with the compulsory courses in Scientific Atheism, Dialectical Materialism, etc. Moreover, any Canadian student, if he so wishes, can take courses in Marxism and in various courses of atheistic thought; but Soviet students do not enjoy the possibility of taking courses on religion or non-Marxian economics, except in the context, respectively, of "scientific atheism" and Marxian economics, i.e. in the form of scorn and attack.

Mr. Cantelon will hardly challenge the fact that there are plenty of overt Marxist professors in Canadian universities not only teaching but preaching Marxism to their students. A nephew of mine has fallen prey to such a professor at the University of B.C. who even convinced him to quit university and join a Trotskyite revolutionary group. Yet, neither this professor,

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# NIPISSING UNIVERSITY COLLEGE

## FACULTY OF ARTS

*Nipissing University College requires qualified University instructors to teach the following courses, pending Senate approval:*

### SPRING SESSION

(April 18, 1983 to June 24, 1983)

- |            |  |
|------------|--|
| COMM 1005E | — Business Organization and Management                     |
| ENGL 1005E | — British Literature from Chaucer to the Twentieth Century |
| ENGL 3115E | — English Literature of the Romantic Period                |
| ECON 3005E | — Macroeconomic Theory                                     |
| ESTD 1005E | — Introduction to Environmental Studies                    |
| GEOG 2605E | — World Regional Geography                                 |
| HIST 3246E | — History of Québec since 1867                             |
| HIST 3246F | — Histoire du Québec depuis 1867                           |
| HIST 3256E | — History of Ontario: Selected Topics                      |
| HIST 3256F | — Histoire de l'Ontario                                    |
| PHIL 2915E | — Philosophy of Science                                    |
| PSYC 3615E | — Psychological Disorders in Children                      |
| SOCI 3095E | — Canadian Society   |

### SUMMER SESSION

(July 4, 1983 to August 17, 1983)

- |            |                                       |
|------------|---------------------------------------|
| ANTR 2045E | — Peoples of the World                |
| CLAS 2505E | — Classical Art and Architecture      |
| FILM 2805E | — History of Film                     |
| PHIL 1115E | — Introduction to Philosophy          |
| PSYC 2305E | — Psychology of Industry and Work     |
| SOCI 2235E | — Sociology of Human Sexual Behaviour |

The stipend is \$3,600 plus moving and accommodation allowances. Please send a curriculum vitae and arrange to have three letters of reference sent to Dr. Roman Brozowski, Acting Dean of Arts, Nipissing University College, P.O. Box 5002, North Bay, Ontario, P1B 8L7. Please call (705) 474-3450, Extension 2291 for further information.

# Education ministers conference a failure

by Richard Bellaire

A national conference held to explore the status of postsecondary education in Canada ended in disappointment and frustration for faculty and student delegates.

The conference, called by the Council of Ministers of Education and held in Toronto October 19-22, was attended by provincial education ministers, several federal government officials and faculty and student representatives from across Canada.

Its aim was to examine four major areas: access to postsecondary education, changing relationships between postsecondary education and working life, patterns of governance, and finances and redeployment of resources.

As the conference closed, many faculty and student delegates were strongly critical of both its structure and general content.

In a joint news release issued by CAUT and OCUEA and endorsed by nine other faculty and student organizations, including the Canadian Federation of Students, the delegates protested the lack of any role played by the conference in the planning of higher education priorities.

The statement pointed to the fact that few provincial ministers of education actually attended the sessions and that the party which pays the major part of the costs for education — the federal government — was given only a minor role to play.

The delegates were also strongly critical of the lack of provision for any meaningful debate.

A succession of representatives from the university community and the government addressed the meeting.

In his paper on access, Dr. Paul Anisef pointed to the attrition of existing programs and the spectre of university closures which had "decidedly negative implications" for accessibility.

"Governments must continually be reminded of their pledge to increase equal-

ity of opportunity through education," he said.

In her address, FAPUO President Marie-Andrée Bertrand discussed the changing nature of the university clientele, which she said is becoming "diversified, feminized and to a large extent older." She called for the concept of access to be replaced by "equality of education between social classes, between sexes and between ethnic groups."

Papers on education and working life addressed the question of the degree to which higher education should be responsive to the job market versus the need to "educate" people. The papers pointed to the difficulty of planning for the job market since manpower planning is far from an accurate science and projections must be made for a decade ahead.

CAUT Acting Executive Secretary Ron Levesque stressed in his response to the papers on accessibility that the academic community must fight the attempt by those who would want to limit accessibility as a means of saving money. Dr. Levesque said that such a move would return the system to the elitist days of the 1940's, and '50's when the ability to go to university was dependent on family income.

Papers on governance and finance dealt with the question of retrenchment, cutbacks and the need for "tough decisions". John MacDonald of the Addiction Research Foundation criticized "amateurism" in university governance and stressed the difficulty of maintaining a collegial system with the context of certified unions. In response, CAUT President Ken McGovern said that unionization was not the problem but underfunding that pits groups against each other.

On the subject of finance, the major issue was ignored — that of the role of federal funding and possible changes to the Established Programmes Financing Act which covers the federal transfers to the provinces for postsecondary education. In a short talk to the banquet, the new Secretary of State, Serge Joyal, said that he put higher education near or at the top of government priorities and that access must be maintained. But he also said that financial times are tough and governments are in a difficult financial position.

A past president of the CAUT, Dr. Israel Unger, argued that universities should not be caught in the battle between the federal and provincial governments. Decisions affecting higher education must be the outcome of careful discussions with all the involved parties.

In the final speech of the conference, Ontario Education Minister Bette Stephenson restated the problems facing the higher education system. She served warning of those issues that will be raised in upcoming discussions: the role of tenure, accessibility, funding levels, manpower training and university autonomy. Dr. Stephenson called for suggestions of how to proceed in future, offering the possibility of some type of continuing forum to bring the interested parties together.

The next stage in the higher education debate will be a meeting of the Council of Ministers and the Secretary of State in November to discuss the federal national objectives and new system of funding as well as the new student aid program.



## President, Ontario College of Art

*Applications are invited from outstanding candidates for the position of President of the Ontario College of Art. Duties are to be assumed for the 1983-84 academic year.*

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In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

## Faculty and students walk out on speaker

by Richard Bellaire

About 70 students and faculty members from a number of Canadian universities and community colleges walked out on the keynote speaker at the Council of Ministers of Education Conference in Toronto.

Faculty and students were angered when the speaker, Dr. Roger Gaudry, former rector of the Université de Montréal, talked of the need to close programs, institutions or departments that are "mediocre". The group also protested Dr. Gaudry's call for a solution to the "problem" of tenure and the need to redefine academic freedom.

In his address, Dr. Gaudry referred favourably to the system used at the University of Moscow. He also suggested that something had to be done to remove older faculty members who had become a load rather than an asset.

The former rector criticized the democratization of the higher education system, particularly in Quebec. He argued

that democratization had let in people who should not be going to university because they cannot do "rigorous work."

Commenting on the walkout, CAUT president Ken McGovern noted that the conference was all pre-planned and that there was no place for students or faculty to respond to Dr. Gaudry's views.

"CAUT is willing to debate the issue of tenure, closure and democratization along with any other topic," Dr. McGovern said, "but to us there was the appearance that we had been set up with no way to respond except by walking out."

Dr. McGovern said that those taking part in the walkout found it distasteful but that it was the only real means of protest.

Faculty members attending the conference felt that it had not been called to find solutions but had been used as an excuse to attack universities in order to distract attention from the policies of underfunding.

## The University of Alberta

Faculty of Dentistry

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# LETTERS LETTRES

nor his former student have been arrested (the former may still be teaching at U.B.C. for all I know) or persecuted in any way despite the alleged activities of Canada's Security Service. In contrast, let Mr. Cantelon think about the fates of Professors Sakharov or Kovalev, for instance, or of all the members of the Moscow Helsinki Watch Committee, whose only crime was monitoring the breaches of the Helsinki accords regarding human rights in the USSR.

As an historian of modern Russia, I should like to find out what is the source of Mr. Cantelon's assertion that 83 percent of the population of Russia were illiterate in 1917? The last full census of the population was taken in 1897 when the national literacy rate was found to be 21 percent. But between then and 1917 the progress in education has been so tremendous that in the last year of Imperial Russia over 90 percent of urban boys of school age and over 60 percent of rural boys of school age were at school. In contrast, owing to the Civil War unleashed by the Bolshevik *coup d'état*, the 1920 school population was just above 30 percent of school-age children.

Another evidence of the progress was the fact that over 60 percent of the army recruits in Russia during World War I were literate. Moreover, in 1908 Duma adopted a Universal Literacy Bill, according to which universal compulsory elementary education was to be implemented by the year 1922. Owing to the war this date was later moved to 1925. All that the Soviets achieved was the implementation of this programme, but they did so, according to their own official declaration, in 1934, nine years later than the pre-Bolshevik Russia would have achieved!

As to the authority of Sir Bernard Pares regarding Russian history, I should like to remind Mr. Cantelon that Pares' glorification of Stalin in the 1940's has deprived him of much credibility as a scholar. Or would Mr. Cantelon choose to rehabilitate Stalin along with Pares, even after Khrushchev's condemnation of "the cult of personality"?

In conclusion, I should very much like you, Madame Editor, to print the attached study of discrimination of students at the Moscow University entirely on racial grounds.\* The report was prepared in Moscow in two languages, hence the rather clumsy English of the original text. One of the authors of the report, the brilliant young mathematician, Valerii A. Senderov, was arrested by the KGB on 17 June, 1982. The grounds for arrest? The KGB considers him responsible for editing typewritten information bulletins of SMOT (Free Inter-Professional Association of Labour), which is a small initiative group aiming at forming an independent trade-union in the USSR. Can Mr. Cantelon perhaps cite examples of arrests on similar grounds in Canada?

D. Pospislovsky,  
Professor of European History,  
The University of Western Ontario

\*Editor's note: Due to its length and complexity, the material in question has not been reprinted in the Bulletin but is available at the CAUT Office in Ottawa upon request.

## Refused grant

Allow me to add a postscript to the issue raised by G. L. Wells in the September issue of the Bulletin. This problem concerned not being able to get a travel grant from Canadian sources because he was a citizen of the U.S. I fully empathize with Professor Wells and in no way am I arguing that one stupidity justifies another. However, it is to

be realized that the situation encountered by him is not restricted to only one country (Canada). As a Canadian with first papers, living in the U.S. (1940-1972), I also was refused a grant from U.S. sources because I was a Canadian!

F. L. Marcuse,  
Department of Psychology,  
University of Manitoba

## Open the books

Since the figures referred to in Al Gordon's letter to the *CAUT Bulletin* ("Shares concerns," September, 1982) were supplied to CAUT by me, I feel obligated to respond to Gordon's claim that the figures are misleading and inaccurate.

Contrary to what Mr. Gordon argues, the figures supplied to CAUT are neither inaccurate nor misleading. Mr. Gordon himself confirms that the library acquisitions budget increased by only \$5,046 from 1977 to 1981 (although he then goes on to make the curious statement that "...it is inaccurate to assume that only \$5,000 has been added to the budget since 1977"). The concern he seems to have is that people may confuse the acquisitions budget for the total library budget. Or at least this would seem to be the implication of his assertion that: "It is important to note that the overall library budget from March 1977 to March 1981 as a percentage of all university expenditures increased from 4.35 percent to 5.07 percent."

These figures are probably accurate — they should be since they come from the Comptroller's office — but they are misleading. Why? Because "all university expenditures" includes not only operating expenditures but also those items that are financed by specific grants, such as mortgage payments, miscellaneous capital, and so on. To get around this problem it seems to me that the budget allocation should be calculated for those items in the budget that are financed out of operating revenues proper, i.e., operating grants provided by the provincial government, tuition fees, and the like.

Mr. Gordon claims that the 75 percent increase attributed to "recruiting and athletics" is inaccurate. It could well be. First off, at the time these figures were submitted to CAUT it was almost impossible to get any figures on athletics, recruiting and certain other items in the budget, let alone accurate figures from the extremely limited amount of budgetary information that was available after 1978. Moreover, even this little bit of information was not very helpful because the method of classification for expenditures on such things as athletics and recruiting changed, so that it was virtually impossible to obtain a consistent series. Secondly, and more important, when I relayed the information to Dan Stone by telephone the estimated increase of 75 percent was used for "recruiting, athletics, public relations (or institutional relations) and similar items."

Such considerations aside, it will be noted that Mr. Gordon does not give us a figure for expenditures on recruitment. Instead, he uses the "Student Services budget which includes recruiting (excluding athletics and scholarships, awards)." According to the audited financial statements for the university, the expenditures on student services in 1977 and 1981 inclusive of recruitment expenditures, but excluding athletic programs and scholarships, were \$121,431 and \$262,928 respectively. The increase from 1977 to 1981 is, therefore, 116.5 percent. Which figure is correct? Who knows? This is what happens when

## NIGERIAN UNIVERSITIES OFFER TEACHING OPPORTUNITIES

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Director, NIGERIAN UNIVERSITIES OFFICE — J  
150 Kent Street, Suite 702, Ottawa, Ontario. K1P 5P4

there is more than one set of books, and where items are shuffled around from category to category — for whatever reason.

As for athletics, there have been so many changes with the way this item has been dealt with in the accounting statements that I'm reluctant to hazard a guess about how much the budget has increased. I do know that this activity is now so prominent at Brandon University that about two years ago the President tried to move an Athletic Field House ahead of a new Library in the University's list of building priorities.

Incidentally, expenditures on the other item I alluded to when talking about the 75 percent increase, namely, public relations — in which I would include Alumni and Information Services — increased from \$17,407 in 1977 to \$122,126 in 1981. Expenditures on such things as recruitment and public relations may have some merit; but I remain unconvinced. It is true as Mr. Gordon claims that the take from tuition fees has increased in recent years. But I doubt that this has much to do with the recruiting and public relations effort. Increased tuition fees played a part. And there were other factors involved — such as the relative increase in fees in Ontario. In conclusion, I would make two points. First, there is no doubt an increasing proportion of the resources at Brandon Univer-

sity have been diverted into administrative activities in recent years. This shift has been engineered by the President without consultation with the people affected by it, namely, students, faculty and support staff; and, as near as I can figure out, without careful scrutiny by the people who are supposed to look after the interest of the public at large — the Board of Governors. And secondly, I would suggest to Mr. Gordon and others in the administration that if they are serious about preventing "inaccurate and misleading" information from getting to the public, then they should open the books.

Errol Black  
Brandon University

## Bulletin error

On page 7 of the October 1982 *CAUT Bulletin* you have a heading: "Two Cheers for President Kenney". The President's name is misspelled; it should be "Kenny".

Yours sincerely,  
Andrew Brockett,  
Executive Officer,  
Faculty Association  
U.B.C.

# Le congrès de la FAPUQ: 1982

par Robert Léger

La Fédération des associations de professeurs des universités du Québec (FAPUQ) a tenu le deuxième Congrès de son histoire à Montréal les 24, 25 et 26 octobre 1982. On retrouvait en particulier les représentants des syndicats (ou associations) des institutions suivantes: Armand Frappier, Bishop's, Concordia, Laval, McGill, Montréal, Polytechnique, Sherbrooke, Trois-Rivières.

Ce qui frappe un observateur de l'extérieur, c'est le mode de travail du Congrès. Un certain nombre d'ateliers ont été organisés, de telle sorte que trois ateliers se tenaient toujours simultanément. Chaque fois, les participants devaient donc choisir le thème discuté qui les intéressait le plus.

Chaque atelier était animé par deux ou trois personnes-ressource qui par un exposé amorçait la discussion. Le tout se terminait par des propositions, discutées et votées par l'atelier. Ces propositions étaient ensuite discutées et votées à nouveau lors de la plénière par tous les participants. Contrairement à d'autres réunions annuelles, par exemple, le Conseil de l'ACPU, aucune recommandation n'était proposée par une instance inférieure, comme par exemple le Bureau de direction.

Parmi les résolutions retenues par le Congrès, on doit d'abord noter celles sur la loi 70 qui affectera les salaires des professeurs d'universités. Le Congrès a demandé à la FAPUQ de ne pas reconnaître la légitimité de cette loi et de porter plainte auprès du Bureau international du travail contre le gouvernement du Québec. On devra aussi étudier la possibilité de contester devant les tribunaux la loi 70.

De plus, mandat a été donné d'étudier à

fond les régimes d'avantages sociaux des professeurs. Rappelons que la FAPUQ a entrepris depuis le Congrès de 1980 une étude sur les régimes de retraite dans les universités du Québec.

Finalement, une résolution qui m'est apparue importante est celle où le Congrès demande à la FAPUQ d'étudier les possibilités d'abolir le Conseil fédéral et d'en répartir les pouvoirs. Rappelons que la FAPUQ a présentement quatre instances. Il y a d'abord le Congrès qui se réunit tous les deux ans et dont les pouvoirs se résument à recommander au Conseil fédéral les politiques générales de la FAPUQ. Le Conseil fédéral semble être l'instance décisionnelle de la FAPUQ et se réunit deux fois l'an. Le Bureau de direction est composé de l'exécutif de la FAPUQ et d'un représentant de chaque association membre. La FAPUQ est finalement dirigée entre les réunions du Bureau par le Comité Exécutif.

Tout en continuant d'être une fédération de services, la FAPUQ sera aussi très impliquée au niveau politique et ceci par la force des choses. En effet, les résolutions portant sur la loi 70, sur les relations avec les centrales syndicales et sur les revendications au niveau de la recherche scientifique confirment cette double mission.

Lors des deux déjeuners du Congrès, les conférenciers suivants ont fait connaître leurs points de vue: Louise Forsythe de l'ACPU et Irving Spitzberg de l'AAUP. De plus on remarquait des invités des associations suivantes: ACPU, FAPUNB, CSN, CEQ, SNESUP (France) et de divers syndicats de l'Université du Québec (Hull, Montréal, Rimouski, INRS).

# A LOBBYIST'S NOTEBOOK

by Ron Levesque

From this commentator's vantage point, it is fair to say that faculty can expect to see governments and some university administrations stepping up their attacks on academic freedom, tenure, and the humanities. These attacks appear to stem from an attempt to divert attention from the effects that underfunding has, and the threatened major cuts in funding will have, on access to our post-secondary institutions.

The recent Council of Education Ministers' Conference (CMEC) held last October, for example, appeared to many of the faculty in attendance to be merely the opening salvo of this newest campaign against the tenure system. The CMEC secretariat had rejected suggestions of tenure and academic freedom, and the aging professoriate as topics for the conference, and in fact, we were told that these topics were only of peripheral interest to this conference.

Nonetheless, M. Roger Gaudry, former Rector of the Université de Montréal, was selected to be the principal speaker at the banquet. His novel views on tenure and academic freedom are not unknown in Quebec (or probably to the CMEC Secretariat). You might find a selection of his views interesting. It is important to note that participants were not allowed an opportunity during the conference, to debate the issues M. Gaudry raised.

"...our universities have delivered, and are still delivering diplomas to students who have never had to submit themselves to a strict discipline of the mind."

"...the concept of an authentic superior teaching and the concept of democratization of that teaching are incompatible, not to say contradictory."

"...it will be necessary to attack the problem of tenure. Not with the ideas of abolishing tenure, but in order to give it back its true academic meaning."

"It will be necessary to redefine, in a modern context, the concept of academic freedom which has been widely abused in the recent past."

And where do we look for these true academic meanings and modern contexts for redefinition, you ask? Why, the Soviet Union, M. Gaudry replies.

He concluded his paper with the following anecdote:

"One day, I was discussing with the Rector of the University of Moscow the question of tenure and I was asking what were the policies of the Russian universities vis-à-vis tenure. I do not have to remind you that most of the universities within the socialist countries are highly elitist, in the intellectual meaning of the term, and in Russia, the University of Moscow is probably the most elitist of all. In answer to my question, Rector Khokhlov answered that tenure did not exist as such in their universities, that all faculty were appointed for a five year mandate and that mandate could only be renewed after a serious examination of the dossier of the candidate by a committee of experts. My obvious question was, 'How many fall at each review?' 'Oh a very small number', he said, 'which varies a great deal but could reach five percent.' And I did ask, 'What actually happens to those whose mandate is not renewed?' 'Very simple', said the Rector, 'they simply go and teach in other universities'."

No doubt Professors Sakharov, Yankov and a host of others were similarly "reviewed". So much for "redefining" academic freedom and giving tenure back "its true meaning". The issues of tenure and academic freedom are important ones and the CMEC was informed that we would be ready to discuss them at any time.

And Now We Return to the Days ... (suitable hoof beats and the William Tell Overture). It is true that Canada is facing difficult economic times. And in such periods governments strive to give the appearance that they know what they are doing even when they don't. The temptation to look for scapegoats and to raise straw man issues is very strong. It appears to me that governments, in attacking tenure and academic freedom, have given in to this temptation. Of course faculty are not the only target at the present time; the various levels of government are busily blaming public servants and arbitrators for inflation.

But periods such as this one also produce some very enterprising souls as well. OCUA's Bert Matthews seems to fall into this latter category. Dr. Matthews wants us to believe that these economic difficulties are in fact a blessing, Ontario's universities can return to the good old elitist days. The result of this would of course be to deny entry to thousands of qualified full and part-time students not to mention the laying off of many faculty members. Under the rhetoric of quality, Dr. Matthews wants the public to pay for a system that will inevitably become the property of those who can afford to buy the necessary education environment for their children. In a society such as ours a retreat to elitism (in the intellectual sense of the word) would inevitably lead to a system where the elite (in the economic sense of the word) would place a disproportionate number of their children in the system. In my opinion, accepting the Matthews scenario would be a very regressive step.

## Catch 22 for NSERC

As many of you will remember, the federal cabinet's demand that the granting councils produce five year plans for its approval signalled the end of many years of government neglect of the research establishment in Canadian universities. While there have been disagreements with the plans, there has been general support both for the government's initiatives and the work of the councils.

The grant for NSERC this year (82-83) however, grew only by approximately 12 per cent. This is not enough for the NSERC plan to keep on track the objectives approved by the federal cabinet committee. NSERC subsequently applied for a supplementary grant. In response to CAUT's support of NSERC's application, Mr. MacEachen replied:

"Although as you note, the government approved the general thrust of the Council's five year plan, it did not commit itself to any particular funding level."

But, I thought, the five year plan was based upon funding estimates. Differentiating between approving the plan and the commitment to fund the plan is a form of sophistry that is somewhat beyond me, I guess.

The approval of the council's plan recognized not only the neglect of the university community for most of the 1970's but also of the vital role this community plays in the economic and social health of this country. We recognize the dilemmas faced by Mr. MacEachen, but now is not the time to lose faith in a future non-recessionary Canada. We will continue to urge the Minister to approve NSERC's request.

## Andrei Sakharov

CAUT has protested on a number of occasions about the ill-treatment of the Soviet physicist, Andrei Sakharov. There has come into existence a Sakharov International Committee. Those interested can write to it at Box 9422, Washington, D.C., U.S.A. 20016.

## University of Victoria

### Computer Science

Applications are invited for two or three tenure-track positions at the rank of assistant or associate professor. To commence July 1, 1983. Applicants should have a Ph.D. in computer science or equivalent research achievement. Preference will be given to applicants with research interests in the following areas: software engineering, computer architecture, programming languages, data bases, computer networks or theoretical areas of computer science. The department offers graduate and undergraduate degrees in computer science and has an active research program supported by a VAX 11/780 AND A PDP 11/44, Micro-Labs with a variety of small systems, and the university distributed database system. Applicants should send a curriculum vitae and the names of three referees to:

Dr. David L. Parnas  
Chairman, Search Committee  
Department of Computer Science  
University of Victoria  
P.O. Box 1700  
Victoria, B.C., Canada  
V8W 2Y2

Applications will be accepted until February 15, 1983. Further information is available from the Department, 604-721-7220. The number of positions to be filled will be subject to the availability of funds. Canadian Immigration regulations now require the university to assess applications from Canadian citizens and permanent residents of Canada before assessing applications from other persons.

## CAUT part of successful lobby

The federal government backed down on its plan to tax benefits under health and dental plans after a successful lobby by the CAUT and other organizations.

The government had announced that benefits under health and dental plans would be a taxable benefit. But in his statement to the House of Commons on October 27, Finance Minister Marc Lalonde said that he would not proceed with the proposal to tax the benefits.

CAUT had testified against the proposal at the Standing Committee on Finance, Trade and Economic Conditions.

In other parts of the economic statement that affect faculty, the Minister of Finance announced that Unemployment Insurance premiums are going to be increased. Effective January 1, 1983 premium rates will be set at \$2.30 per \$100 of insurable earnings for employees and at \$3.22 per \$100 for employers. The increase is about 40 percent over the old premium rates.

Little of the rest of the statement had direct bearing on universities. The most significant fact may be what the minister did not say. There had been rumours that he would announce some type of cutback or limitation in growth for the Established Programmes Financing Act, particularly as it relates to higher education. There was no mention of this in the statement.

# BARGAINING TALK NÉGOCIATIONS

by Howard Snow

## Strike at Windsor

The major story in collective bargaining since the last column is the one week strike at the University of Windsor. The Windsor Faculty Association went on strike on Monday, September 20th and stayed on strike until settlement was achieved on Sunday, September 26th. They went back to work the next day.

Negotiations at Windsor were highlighted by an unwillingness on the part of the employer to engage in any form of discussion. The negotiations began on April 2, 1982, long before the agreement's June 30th expiry date. Little progress was made in negotiations on either monetary or non-monetary items during the spring. In mid-June the employer proposed, away from the negotiating table, a financial package with few changes in the non-monetary items. The Faculty Association negotiators were annoyed by the unwillingness of the Board negotiators to discuss a number of non-monetary items of concern to the Association. They were also dissatisfied with the salary offer, which was less than that already agreed to in a number of other Ontario universities and which did not appear to include components found to be appropriate by the arbitrator at the University of Toronto. The employer desired that its package be put to the membership. The Association's bargaining team and executive passed it on without comment. The Council of the Association recommended rejection of the offer to the general membership but at that time the employer withdrew its offer and negotiations ceased.

In late summer the Faculty Association bargaining team made a number of unsuccessful attempts to restart discussions. On August 13 the conciliation officer appointed by the Ontario government attended for one day. As the Board had no offer on the table and declined to make one, the conciliator filed a "no board report." A no board report leads in time to a lawful strike position.

A number of non-monetary items were of considerable importance to the Faculty Association including items relating to past practice, use of part-time faculty, use of limited-term faculty, sabbatical, access to information, reduced time status, voluntary early retirement and regular retirement.

By early September it was the view of the Faculty Association negotiating team that the Board negotiators needed considerable pressure applied before productive negotiations could finally begin. A strike vote was held on September 10th. Overwhelming approval for a strike was given — 79 percent of the total membership voted at this time, and 92 percent were in favour of going on strike. At this time there was still no offer from the employer.

The Association began a work to rule during the week of September 13th and this finally prompted the Board negotiators to make a salary offer. Further efforts to engage in meaningful discussions with the Board team came to nothing and a strike deadline of 8:00 a.m. Monday, September 20th was set.

A mediator, appointed by the Ontario Ministry of Labour, met with the parties throughout the weekend of September 18th and 19th. Again, no meaningful negotiations occurred. Finally, on Monday, September 20th, shortly after 6:00 a.m., the Board negotiators had a proposal to make. They delivered a first and "final" proposal of some 17 pages and announced that this was "non-negotiable." The Faculty Association negotiators

found it difficult to adequately assess the offer prior to the strike deadline. In addition, it was clear that there were internal inconsistencies in the document and it was not possible to get clarification. They decided to proceed with the strike as scheduled and picket lines formed at 8:00 a.m. September 20th.

A general membership meeting convened at 10:00 a.m. Monday and the final Board position was explained. The members gave overwhelming support to the executive and the negotiating team. It was clear by this time that members of the Association were seriously disturbed about the unwillingness of the Board to bargain meaningfully on the non-monetary items, about the peremptory and apparently unsatisfactory salary offer received that morning, and about the absence of responsible bargaining by the Board negotiators. The strike was not about money — it was about the principle of responsible collective bargaining.

The following day, the Ontario government introduced legislation designed to restrain wages and prices. This clearly has implication for the Windsor Association but even at the time of writing it has not been passed.

Meaningful negotiations began on Wednesday, September 22nd and continued throughout the week. On September 25th the Trustees of the CAUT Defence Fund voted to provide strike pay to the University of Windsor Faculty Association. On September 26th a new agreement was reached. The agreement includes an improved monetary package and revisions to a number of the important non-monetary items which the Board had for so long refused to even discuss. It was ratified by both sides and the strike ended on Monday, September 27th with classes resuming that day.

## Miscellaneous

In other negotiations Laurentian and St. Thomas both settled their protracted negotiations. Negotiations are about to begin at Guelph on a comprehensive special plan arrangement and at Mount Allison on their first collective agreement. Meanwhile conciliation continues at St. Boniface.

As reported in this column last year, the Alberta government has passed new legislation regulating collective bargaining for academic staff in the universities. Pursuant to this, the University of Calgary Faculty Association is seeking a more comprehensive agreement. While the associations at the other three Alberta universities have in past years been successful at negotiating comprehensive agreements, the Board of Governors at the University of Calgary has continually limited its willingness to negotiate to a few monetary items.

The various provincial government restraint programs have already had an impact in a number of ways. The B.C. legislation has resulted in the arbitration award reported in the last column being referred back to the Arbitrator. The Compensation Stabilization Commissioner interpreted the legislation differently from the Arbitrator and referred the matter back with directions. The Commissioner agreed that the regular increments need not be costed but he disagreed with the Arbitrator with respect to the inequity and anomaly adjustment.

The proposed legislation in Ontario, referred to above, would have great impact on bargaining. That legislation, unlike the other provincial programs, provides simply for a statutory extension of existing collective agreements, or a statutory modification of multi-year collective agreements, with a 5 percent increase. Most other similar legislation provides merely for a ceiling on negotiable increases.

The Faculty Association at Université Ste-Anne in Nova Scotia was recently granted voluntary recognition. The Nova Scotia legislation includes an explicit provision permitting the employer to voluntarily recognize a union as representing a group of employees. This process is an alternative to requiring the union to go through the sometimes complex and costly certification hearings. As an example of the complexity and cost one need only recall the Mount Allison certification for which the Board of Regents at Mount Allison is reported to have budgeted \$175,000, (or approximately \$1,500 per member of the proposed bargaining unit) in its unsuccessful effort to defeat the Faculty Association's attempt at certification. In times of government restraint the money can surely be better spent elsewhere.



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## Underfunding of universities leads to new labour market

by Jill Greenwell

Canada is creating a generation of gypsy scholars who are being exploited by universities because of underfunding says the Canadian Association of University Teachers.

In a brief to the federal commission of inquiry into part-time work, the Association noted that government underfunding of post-secondary education has resulted in a rapid expansion of a wide variety of part-time university teaching positions.

The part-timers, many of whom are women and young, are frequently as well-qualified as full-time academics. They often have no other incomes, receive proportionately far lower salaries, have no pensions nor other fringe benefits, carry heavier than normal teaching loads, and never know from year to year whether the university will rehire them. Without time or facilities necessary for research, they find it difficult to compete for full-time posi-

tions which require a demonstrated research capability and publication record.

The CAUT has called for the establishment of a royal commission on higher education to investigate the impact of current funding levels on universities, including hiring practices. They fear that increasing government demands that universities be more responsive to the needs of society and the growing trend to part-time academics without job security will jeopardize the traditional autonomy of universities and their ability to comment on and assess all aspects of society without intimidation.

The Association also called for improvements in the collection of data on part-time academics and the extension of federal and provincial labour legislation to cover all part-time university employees.

# NOTES FROM WASHINGTON

by E. Patrick McQuaid

Not since *The New Yorker* ran a cartoon that was actually funny has the United States had a policy on education. That was sometime during the Kennedy administration. Now arguably the most important, though least talked about, element of a national economic policy is its dependence on an equally sound plan for support of a nation's schools, particularly at the secondary and tertiary levels. Since the flurry of activity and excitement generated by Sputnik, the U.S. has had neither.

Generally speaking, American policy on anything has always been reactionary and it is again the threat of foreign domination, this time in the high technology industries, from such countries as Japan, France, and West Germany, that is forcing the Government to rethink its game-plan (which from Day One has had as its ultimate goal, dismemberment). Industrialists and academics alike agree that the country's unpromising run in the global economic theatre is a result, to a very large extent, of a system that has failed to place sufficient stress on practical and increasingly relevant areas in science and mathematics.

At this writing some 38 separate bills are on the agenda for next term in the Congress, all aimed specifically at revitalizing math and science education from pre-school to post-graduate. Washington transients are getting remarkably adept these days at stating exactly where American education ought to be heading but remain sadly lacking in suggestions as to how we might get there. A number of these proposals are coming from legislators who actually know something about education, however, and some hope appears that the present state of affairs may not endure against the forces of common sense.

Senator John Glenn, the pioneer-astronaut who one assumes would have some insight regarding math and science training, proposes that a national commission, buttressed with a federal endowment of \$200-millions, be established to thoroughly explore the strategic importance of education's link with new technologies. Elsewhere, Senator Claiborne Pell, who gave his name to the nation's largest student aid program, has authored legislation that would upgrade science labs throughout the country's public schools by making \$400-millions available to the states.

## Tsongas bill an impressive proposal

Perhaps the most impressive and optimistic proposal is to be sponsored by Senator Paul Tsongas, though actually drafted by a coalition of educators and business executives from his native New England. Mr. Tsongas hails from Massachusetts, a haven for high tech industry.

In round figures, the legislation calls for a billion dollar commitment, half of which the federal government would underwrite. Some \$200-millions would come from industrial support with the remaining \$100-millions garnered from individual state coffers. The federal dollars would come through the sale of a small per cent of mineral royalties from public lands — certainly an interesting approach to recycling the nation's non-renewable resources.

The design and intent of the legislation is modelled on the Morrill Act of 1862, the most sweeping piece of law ever to tie economic growth to a national education strategy. The act, named for Vermont Congressman Justin Morrill, provided 17,430,000 acres of federally-owned land for the founding of colleges specifically for the study of agriculture and mechanical arts. When enacted there were only five engineering colleges in the entire country, but within 20 years there were 85 such schools, half of which were departments within these "land-grant" institutions. One of the first schools chartered under the Morrill Act was the Massachusetts Institute of Technology. The nation's largest university system, California, is a land-grant institution.

The Tsongas bill, still under development, is being referred to as the High Technology Morrill Act, with quotes thrown around it. What makes this particular plan popular among educators is its aim to balance the goals of employment and enlightenment, "integrating humanities with technology education," as its authors envision it.

The plan is fully laid out in a book length exploration of high tech's future called *Global Stakes* (Ballinger, a subsidiary of Harper & Row based in Cambridge, Massachusetts). The panel of authors includes Ray Stata, founder and president of Analog Devices, a computers-related firm with annual sales running \$150-millions. He has a seat on the Massachusetts High Technology Council and on the Massachusetts Board of Regents of Higher Education, the state ministry.

"The type of education required in the coming decades," according to the book, "should remove the limits of learning imposed by educational policies that are either too vocationally narrow or too theoretically abstract."

A national conference to air out the proposal is scheduled for February 9 and 10 in Boston, according to John Hoy, President of the New England Board of Higher Education, a regionally-financed consulting agency which has been instrumental in bringing the need for such a policy to the attention of Congress.

## Higher education should move with flow

Piecemeal support for just such a strategy is emerging from a variety of camps. An MIT report on electrical engineering education is urging tighter partnerships between industry and academe in an effort to encourage life-long learning for computer scientists. Elsewhere, in St. Louis, the president of the university system of Massachusetts, David Knapp, told members of the National Association of State Universities and Land Grant Colleges that higher education should move with the flow of high technology in a way that parallels its involvement in agriculture and agribusiness during the last century.

In Minneapolis, Walter Mondale, Vice President under the Carter Government, tied declining productivity rates to declining SAT scores, noting that Pentagon training manuals have to be written at a sixth-grade reading level.

"Everytime throughout our history," he said, "when we have faced a national challenge that obstructed our future, we have turned to education to surmount that obstruction. Education has always been the best investment we can possibly make."

Mr. Mondale, an unannounced contender for the 1984 White House, called Ronald Reagan's "the most anti-education Administration in modern history," in an address to the American Council on Education. "This is a radical situation," he said. "I never im-



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agined that it would be necessary one day to explain to an American President the public stake in education."

**Footnotes:** Despite his efforts to defeat such legislation, Mr. Reagan this fall signed a bill intended to prevent his office from further reducing federal grants and loans to roughly two million poor and middle-income students, who account for more than a third of all eligible students. The President admitted that during an election year he could not muster enough support from Congress to cut what amounts to the costliest, though most politically popular, program in the country.

Military research at colleges and universities in the US has increased by 70 per cent during the past three years, a trend the American Friends Service Committee labelled alarming and dangerous. The Quaker peace research group surveyed federal contracts awarded between mid-1980 and mid-1981 and discovered that some 250 colleges received Pentagon funds totalling over \$1.1-billion. Nearly half of that was split between MIT and the Johns Hopkins University in Baltimore.

The report also noted that while total appropriations for student financial aid has dwindled, scholarships for career military students have increased in number from 18,500 to 26,000 during that same period. The record spending comes after a significant drop in Pentagon-campus connections resulting from anti-Vietnam war sentiments.

E. Patrick McQuaid is an education writer and contributor to a variety of publications dealing with higher education issues in the United States.

# The faculty — key to accessibility for the disabled student

by Thomas F. Siess

The year 1981 was the International Year of the Disabled Person. Only time will tell whether or not it was a success.

It is clear, however, that the publicity associated with the Year has made the community more aware of disabled persons and their special needs. It is equally clear that disabled members of the community have developed a sense of self-confidence and assertiveness, and that they are demanding that their rights to equal access to the amenities and services in the community be honoured.

It is less certain, but probably true, that employment opportunities for disabled persons are at least slightly improved. It remains now for the community to move from this increased awareness to action which will see the hopes of equal access become a reality. This article is addressed to the issue of the action which the University community must take for that to happen.

Before looking ahead to how we, as a University, might proceed from the International Year, it may be helpful to review what is already available to aid disabled persons in achieving full participation in the community in general. First, there is an extensive system of specialized support services. This system includes rehabilitation personnel, specialized counsellors, tutors, readers for those with perceptual disabilities, attendants for the severely physically disabled, and a variety of social agencies.

Second, an impressive assortment of technical aids and devices has been developed. These include computer based aids, lifts, mobility aids of various types, audio amplification devices, and recording and transcription aids. It seems safe to say that if a disabled person's problem can be solved by technical means, the necessary technology probably exists. In fact, the greatest dilemma which often arises is

whether to procure a particular aid or device now, or wait for the next generation of improvement which might appear in a few weeks or months.

Finally, there is an often bewildering body of legislation directed at assisting disabled people. This includes building code regulations, human rights legislation, as well as legislation relating to specialized needs for housing, transportation and education. Of particular significance are recent amendments to the Education Act which, in essence, provide disabled children with necessary instruction within the regular classroom, and proposed amendments to the Human Rights Code, which will require equal opportunity in education and employment.

These support services, technical aids and devices and legislative provisions can make it possible, at least in principle, for disabled people to use the resources of the community. Often the greatest remaining handicap of people with disabilities is a lack of the training and/or education that would allow them to take advantage of the improved opportunities that those provisions make possible. The community can provide for the removal of physical and legal barriers to education and employment, and the university can ensure that the institution is physically accessible and that it provides appropriate support services to disabled people. But it is the faculty who ultimately provide access to knowledge and ways of knowing, and only the faculty can make the modifications in teaching procedures and methods that will make program accessibility a reality for disabled students.

What does all this mean for you, an individual member of faculty? In part, the answer can be found by examining the attitudes and approaches that people within the institution do and should adopt. Disabled students must cope with a variety of

mistaken and handicapping assumptions made by others. The most extreme assumption is one which says that disabled people, because they can't do some things, probably can't do anything at all very well. In the University, this would translate into a conclusion that disabled people really aren't suited for university education, or at least for most university programs.

Fortunately, this extreme view appears to be rare. Close relatives, however, are more common. For example, assuming that disabled people can and must do all tasks in the same way and in the same time period as non-disabled students has the same effect as outright rejection. The opposite assumption is equally handicapping. In the "mothering" approach to disabled students, it is assumed that everything possible must be done for the disabled person. This might even include lowering of standards or other ways of overcompensating for the person's disability. In the final analysis, this approach also contributes to the person's handicap.

Finally, there is the romanticized assumption that all disabled persons are "super heroes" who need no help at all. This, of course, results ultimately in a failure to make even modest adjustments to meet the legitimate needs of these students.

In contrast to rejection, neglect or smothering assistance, what disabled students need most is a matter-of-fact acceptance of both their limitations and abilities. They need the kind of direct involvement and communication with the faculty which will result in relevant assistance being provided, but only when and if it is needed.

In concrete terms, this attitude of acceptance requires several kinds of action. First, it requires flexibility. Like all other students, each disabled learner is different. The amount of faculty time each requires varies, and the kind of task modification needed also varies with the subject matter as well as the student. Flexibility might include allowing a student to tape your lectures or even providing them with copies of your notes. It might mean giving an exam orally rather than in written form, or extending the time somewhat for exams or assignments. It could include special seating arrangements or even provision for an interpreter for a deaf student to attend classes. It might be as simple as choosing texts earlier to allow time for getting Braille copies.

It could be even simpler, such as allowing a student with one hand to use a clip board to hold an IBM answer card, even though students normally are not allowed to bring any materials into the exam room. By and large these modifications are not difficult or disruptive to the instructional process. In general what is required is that a strategy be worked out with the student that is consistent both with legitimate course requirements and demands, and the capabilities of the student.

The second action that should be taken is one of taking the initiative in offering assistance to disabled students. You may be apprehensive or uncertain of your ability to respond effectively to the student's needs. The student, however, is probably even more anxious. After all, the professor is the person in authority in the classroom, and that fact will make it difficult for many students to initiate a request for special consideration. Taking the initiative might mean making an announcement that any students

who feel they need special assistance because of a disability should make an appointment to see you. This approach recognizes that some disabilities are not evident. In the case of clearly evident disabilities, it might be desirable to approach the individual directly and tactfully.

The third action that must be taken is the commitment of some time and effort. As noted before, many modifications are easy, and require little or no time. However, there is no question that some students will require significant amounts of time and creativity. There can be no complete substitute for your own energy and imagination in these instances. However, many universities have now developed a system of support services to aid disabled students and/or faculty members who teach disabled students. Some of these systems are quite well-established and elaborate, others are newer and less comprehensive.

In either case you should make yourself aware of the services that exist in your university, and use them. They might include a Co-ordinator for Disabled Students, a disabled students' organization, a counselor with special responsibilities for disabled services, and/or a resource centre with a variety of print material which might assist you or a student. You might also find that various offices, such as that of the Registrar, are quite willing to be accommodating by making special classroom or timetable arrangements. The only way to find out what is possible is to try, and you, the faculty, are in the best position to make that effort.

Considered together, the tasks required to ensure equal access for disabled persons are very large indeed. The costs of physical modification across the university system is very great. The co-ordination of service between the community and the university presents very significant challenges and probably requires many modifications of service delivery systems. The extraordinary costs faced by disabled students will also need to be met.

But even if all of those changes were in place, the disabled student would be no further ahead if there was not a genuine commitment on the part of faculty members to be flexible, to initiate action to make necessary modifications to classroom procedures, and to invest time and energy in providing assistance. With that commitment, however, the promise of equal opportunity can become a reality even before those more difficult changes take place.

The challenge of transforming the awareness brought about by the International Year of the Disabled Person into action rests, in large measure, with you and the support services in the University which are available to you.

Thomas F. Siess is the Director of Student Services and Co-ordinator of Handicapped Students at the University of Western Ontario.



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*The United States and the Soviet Union appear unable to come to grips with the proposition that technological changes which enhance mutual counter-force capabilities undermine deterrence and are highly destabilizing.*

# Nuclear deterrence and the impact of technological change

by R.B. Byers

The continued reliance on deterrence for the prevention of war between the United States and Soviet Union, as well as between East and West, has become a major public policy issue in Europe, the United States and Canada.

Nuclear deterrence, as a cornerstone of Western security, is being increasingly called into question as a result of three inter-related sets of factors: first, the rate and nature of technological change; second, the impact of new nuclear technologies on the strategic balance and strategic doctrine; and third, the inability of arms limitation negotiations and agreements to ensure stable mutual deterrence. Superimposed upon these three factors is the sense, in a number of circles, that increased military capabilities — both nuclear and conventional — have not produced a more secure security environment.

Within the nuclear context, disarmament is being proposed as a desirable objective with growing frequency. Irrespective of the probability of success for nuclear disarmament, it is clear that in one form or another nuclear weapons will remain an important component of the military capabilities of the nuclear powers, especially the superpowers. This being the case, the future evolution of nuclear capabilities and the management of the strategic relationship between the United States and the Soviet Union becomes a central issue.

It should be noted that, with respect to technology, the impact of change per se is not necessarily a problem. That is, changes in nuclear technologies can have a variety of effects vis-à-vis the stability of nuclear deterrence: no effect, a stabilizing effect, or a destabilizing effect. Therefore, it becomes important to assess the impact of technological developments on the stability of nuclear deterrence. Not surprisingly, such assessments become a function of perceived requirements for stable mutual deterrence. Since no consensus exists regarding the requirements for deterrence credibility, there is no consensus regarding the impact of changes in nuclear technologies. However, if stable mutual deterrence remains the only viable utility of nuclear weapons, then the following military and political conditions constitute necessary criteria:

□ That the nuclear deterrence should be mutual; that is, both superpowers should possess sufficient nuclear forces to withstand a first strike and still be able to retaliate in kind (retain a credible second strike capability).

□ That the state of the nuclear strategic balance should be one of rough parity (essential equivalence).

□ That shifts in the strategic balance do not call into doubt the second strike capability of either side.

□ That command, control and communications (C<sup>3</sup>) capabilities are sufficient to

withstand a preemptive nuclear attack.

□ That hasty decisions regarding the use of nuclear weapons are not required in a crisis

situation.

□ That both the U.S. and the USSR accept these criteria and that neither perceives the

other as trying to destabilize nuclear deterrence.

Given these criteria, it can be argued that since the early 1970's nuclear deterrence has become less stable as a result of changes in nuclear technologies. Basically, six technological developments account for a less stable strategic environment.

□ The first concerns the increased throw weight (nuclear yield) of Soviet intercontinental ballistic missiles (ICBMs). In 1975 the USSR commenced deployment of the SS-18 ICBM with a throw weight of 16.5 megatons. By mid-1982 some 308 of these "heavy" ICBMs had been deployed. The Americans have no ICBMs of equivalent megatonnage. As of mid-1982, the equivalent megatonnage of the ICBM and submarine launched ballistic missile (SLBM) forces of the United States approximated 2188, while the comparable Soviet figure is approximately 5800 of which the SS-18 accounts for 2300 equivalent megatons. If American and Soviet long range bombers are included in this figure, the totals rise to 3752 for the United States and approximately 6100 for the Soviet Union.

□ The second development involves the deployment of strategic delivery systems with multiple independently targetable warheads (MIRVs). American Minutemen ICBMs are equipped with three MIRVed warheads, while the Soviet SS-18 can carry up to 10 warheads and the SS-19 up to 6 warheads. In terms of SLBMs, the American Poseidon C-3 and Trident C-4 have a maximum capability of 14 warheads per delivery vehicle. In terms of Soviet SLBMs, the SS-N-18 Mod 3 can carry a maximum of 7 warheads and the SS-NX-20 (1981) up to 12 warheads.

Thus, while the number of ballistic missile delivery vehicles has actually declined since the late 1970's, the number of deliverable warheads has risen significantly since the early 1970's. For example, in terms of delivery vehicles, the 1978 and 1982 figures for the United States are 1710 and 1552 compared to 2528 and 2387 for the Soviet Union. By way of contrast, the number of strategic warheads for the United States is now approximately 6920 compared to 7000 for the Soviet Union. Prior to 1970, neither superpower possessed MIRVed delivery systems.

□ A third technological development has been the increased accuracy of all types of nuclear delivery systems. Here, major improvements have been a function of the use of satellites for inflight guidance and navigation. Accuracy is more important than nuclear yield as the "counter-military potential" (CMP) of the delivery vehicle is equal to  $(\text{Yield})^{2/3} / (\text{CEP})^{2/3}$  with the circular air probable defined as the radius of a circle within which 50 per cent of the warheads can be expected to fall. The CEPs of the more recent American and Soviet ICBMs give both superpowers a theoretical hard target kill capability and thus can be categorized as counter-force nuclear weapons. American counter-force



Professor Byers is the Director of the Research Programme in Strategic Studies at York University.

Tom McDonald

capabilities will be improved even further should the MX ICBM be deployed, and the Soviets can be expected to follow suit. The next generation American SLBM — the Trident II D-5 — will also possess a counter-force capability, and it is safe to assume that a similar situation will exist for the USSR.

□Fourth, with MIRVing technology, the viability of Ballistic Missile Defence (BMD) systems became less credible and this, in part, accounted for the 1972 Strategic Arms Limitation Talks (SALT I) agreement by the superpowers to limit deployments in this area. Nevertheless, both the United States and Soviet Union have continued research development on BMD-related technology. With increased concern over counter-force capabilities, there has been a corresponding revival of interest in BMD.

Proponents of such systems now claim that earlier technological problems can be overcome and thus serious consideration should be given to the development and deployment of BMD systems in order to protect ICBM sites. Since this would require an abrogation of the SALT I Treaty, it should only be pursued after the most thorough review of the relationship between BMD systems and the stability of nuclear deterrence.

□Fifth, cruise missile technologies have emerged as a controversial development. The basic technology is not new; cruise missiles were initially used by the Germans in World War II and have been deployed as non-strategic weapons at sea and in the air by the Soviets since 1961. However, with the miniaturization of guidance systems by the Americans and the development and deployment of air launched cruise missiles (ALCM) with a range of 2500 kilometres, cruise missiles have become a public issue. Cruise missiles are highly accurate and have counter-force potential. However, given their sub-sonic speed, they are not first strike strategic weapons. From this perspective the current generation of ALCMs are not particularly destabilizing. Yet, should either superpower deploy supersonic strategic missiles, this assessment could change. Furthermore, if deployments occur on sea-based systems, the prospects for arms limitation become even more unlikely.

□Sixth, there is increased concern regarding the strategic militarization of space. The attempts by both superpowers to develop anti-satellite capabilities could have a destabilizing impact on C<sup>3</sup> systems which are essential for a credible second strike capability. More important is the current research and development related to the possible deployment of a space based laser ballistic missile defence system which, at least in theory, could attack ballistic missiles in their launch phase.

Taken cumulatively, these technological changes have adversely affected perceptions of strategic stability and have called into

question, at least in some circles, the basis of nuclear deterrence. Not surprisingly, rather differing views of the state of the strategic balance and of strategic doctrine have emerged.

Prior to the mid-1970's, the Americans possessed strategic superiority vis-à-vis the Soviet Union. Since that time most observers have acknowledged that the strategic balance has been one of rough parity (essential equivalence) between the superpowers. Members of the Reagan administration, including the President, have recently argued, however, that imbalances and invulnerabilities have arisen and these must be rectified. The primary concern has focused on the theoretical capability of Soviet ICBM forces to "take out" American ICBMs. Thus the debate over ICBM vulnerability and a major rationale for the October 1981 American strategic modernization programme.

The programme which is being promoted by the Reagan administration calls for a force of 100 B-1 bombers with ALCMs starting in 1986, Trident II D-5 in 1989, several hundred sea-launched cruise missiles on attack submarines commencing in 1984, 100 MX missiles in Minuteman III silos, an improved strategic defence system, and the pursuit of an operational anti-satellite system and an expanded civil defence programme. It remains highly questionable whether Congress will approve and fund all of this package, but the administration claims it is necessary to restore the strategic balance. It goes without saying that the Soviet Union will also continue to modernize their strategic capabilities.

Despite asymmetries in force structures and nuclear capabilities, the changes of the last ten years have not significantly modified the overall state of the strategic balance. Rough parity (essential equivalence) remains a hallmark and both superpowers retain a credible second strike capability. In all probability, American and Soviet strategic modernization will not change this situation. But, at a minimum, there are legitimate concerns that technological changes could give one side or another an added advantage. Needless to say this has been a complicating factor in terms of stimulating the qualitative side of the strategic arms race.

Another serious problem concerns the linkage of strategic nuclear weapons with the European based intermediate range theatre nuclear systems. Here, the Soviets have currently deployed some 300 odd mobile SS-20 intermediate range nuclear systems each with three warheads. Since the Americans and NATO have no equivalent systems, this has added to perceptions of vulnerabilities and imbalances within the European theatre. Nevertheless, the SS-20 does not give the Soviet Union a viable European first strike capability and the overall nuclear balance remains one of

essential equivalence even though the Soviets have a decided advantage in the European theatre.

The changes in the nuclear capabilities of the two superpowers have been such that the United States and Soviet Union are now accusing each other of attempting to destabilize the nuclear balance via the acquisition of counter-force nuclear systems which possess first strike characteristics. At the same time, it remains clear that current nuclear capabilities far exceed the requirements for deterrence and this has become a central focus for the current debate over the modernization of nuclear weapons.

Of equal or greater importance are changes in strategic doctrine which can be linked to the more technically advanced nuclear capabilities of the superpowers. This has become more of an issue in the United States than in the Soviet Union given the emphasis which has been placed, since the early 1970's, on modifying American strategy in the direction of emphasizing limited nuclear options. Under President Reagan, this trend continues as United States strategic doctrine now emphasizes the need to acquire the capability to pursue a "protracted" nuclear strategy. Within this context there is considerable discussion taking place of the feasibility of a limited nuclear war.

In essence American strategic doctrine now appears to coincide with Soviet doctrine; that is, both superpowers are placing considerable emphasis on the fact that nuclear weapons have nuclear war-fighting capabilities (are counter-force weapons). Thus there now exists greater convergence of American with Soviet doctrine as both superpowers emphasize the war-fighting aspects of their respective doctrines.

In this sense, proponents of the "protracted" nuclear strategic doctrine approach perceive a positive correlation between counter-force nuclear capabilities and deterrence credibility. The critics of this approach point out that the combination of technological change with enhanced counter-force nuclear capabilities and changes in strategic doctrine increase the probability of nuclear weapons use. Thus there is growing concern and fear regarding the possibility of nuclear war. This is particularly true when the United States and Soviet Union are seen to accuse each other of attempting to obtain a preemptive first strike capability — an unlikely prospect.

Consequently, the United States and the Soviet Union appear unable to come to grips with the proposition that technological changes which enhance counter-force capabilities tend to undermine the mutuality of deterrence and can be regarded as highly destabilizing.

Given the interrelationship between technological improvements in nuclear capabilities on the one hand and the current

state of the strategic balance and doctrinal changes on the other, what are the prospects for retaining deterrence stability? In part, this becomes a function of the degree of arms limitation progress between the superpowers.

Despite the deterioration of the political relationship between the superpowers, negotiations regarding strategic as well as intermediate range nuclear forces are underway. Both sides are, in terms of declaratory policy, committed to deep cuts — in effect, nuclear disarmament. Yet both superpowers appear intent on enhancing their own security at the expense of the other. Furthermore, the approach adopted seems to be one of counting various types of systems by a variety of criteria related to measurements of the strategic balance. However, President Reagan's position of emphasizing one destabilizing system — that is, Soviet ICBMs — is a step in the right direction. What must be done is for the superpowers to expand the scope of the negotiations to ensure that other destabilizing systems are included.

In effect, the attempt by the superpowers to negotiate strategic arms limitation by number counting or by focusing on specific systems is not the way to proceed. There must be an entirely new approach to arms limitation and here the superpowers should agree on four objectives:

□The first stage of negotiations should focus on what constitutes the underlying requirements for nuclear deterrence. Thus, the two superpowers should agree to negotiate with a view to ensure mutual nuclear deterrence based on credible second strike capabilities at substantially lower force levels within a framework of strategic parity.

□The major priority for the detailed stage of negotiations should be the pursuit of strategic stability by the elimination of counter-force nuclear systems which would, in turn, reduce fears of a preemptive first strike.

□Acceptance of this agenda should be accompanied by superpower agreement for an immediate bilateral freeze on the future deployment of all strategic systems: that is, a partial nuclear freeze.

□The partial freeze should be followed by negotiating a comprehensive nuclear freeze on the production, testing and deployment of all nuclear systems, plus an agreement on a comprehensive test ban treaty.

If these objectives can be agreed upon, then strategic arms negotiations would take on real significance and the superpowers will indicate to the rest of the world that they are serious about utilizing nuclear weapons for deterrence and deterrence only. Any other alternative, short of complete nuclear disarmament, will serve as a historical indictment on the ultimate folly of the world's two leading nuclear powers.



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Send vitae and names of three references to: DR. MARTHA PIPER, Director, School of Physical and Occupational Therapy, 3654 Drummond Street, Montreal, Quebec, H3G 1Y5. Only Canadians and Landed Immigrants to Canada need apply for this position.

**UNIVERSITY OF WINNIPEG**



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# Development, disarmament and common security

Four world leaders — Pearson, Brandt, Thorsson, Palme — offer one message for mankind

by Douglas Roche

Last June 12, a few days after the opening of the United Nations Second Special Session on Disarmament, I took part in a peace march past the U.N. Building, through the streets of Manhattan and into Central Park. The march was hailed as the largest political demonstration in the history of the United States.

Police estimated that 750,000 people participated, filling the streets and groves with echoing songs and hopeful slogans. The vast rally brought together children and Buddhist monks, Roman Catholic bishops and rock stars, university students and union members. There were delegations from throughout the U.S., most of the Canadian provinces, Europe and Asia, including several thousand Japanese. The march was three miles long, and participants carried placards, mostly urging a nuclear freeze, in dozens of languages.

It was at that moment that the peace movement of the '80s became legitimized and a vital political force.

Several weeks later, when UNSOD II ended in failure and great lamentation, Inga Thorsson, the Swedish delegate who had played a leading role, saluted the June 12 rally as "one of the most impressive manifestations of free popular movements ever witnessed." And she predicted that the present popular movement of ordinary people all over the world, demanding a stop to the madness of the arms race, would have a decisive impact on the future work of governments.

What is this "future work?" What is the role for Canada in peace-making? What are the issues both the government and the people of Canada should concentrate on in the struggle for security in the new global community?

In this article, I want to point to the central danger the world faces; what four outstanding international authorities have told us in widely-acclaimed reports; and the leadership role Canada must now assume.

Against the background of wars raging in the Falklands and Lebanon, the representatives of 157 nations gathered at the U.N. for the Special Session on Disarmament, which featured an unprecedented turnout of world leaders: 18 heads of state and prime ministers and 44 foreign ministers were among the speakers. In his opening address, the new U.N. Secretary-General, Javier Perez de Cuellar, put his finger squarely on the world crisis:

"The arms race — which had already reached such dangerous and irrational proportions four years ago (at UNSOD I) — has continued to spread and intensify. Weapons of terrifying destructiveness are piled up at an increasing tempo and new ones added to them. New regions of the globe have been drawn into frantic competition for increased armaments. The arms race extends into the oceans of the world and into outer space. In fact, it is ironic that the accumulation of arms is one of the few expanding industries in a period of economic depression and gloom. An appalling proportion of human and material resources that should be directed to better ends continues to be wasted on this

endless and ultimately illusory search for security through arms."

At one stroke, the Secretary-General dealt with East-West and North-South issues that intersect at the point called security. The massive build-up of nuclear arsenals and conventional weapons, chaotic imbalances of food and population, violations of human rights, depletion of resources, an upsurge in violence and terrorism — all these problems make the 1980's the most dangerous decade that the human community has ever faced. There is nothing in

mise rising public anger and social upheaval.

No indicator shows more graphically the incredible destructive power that is loose in the world than the existence of 50,000 nuclear weapons with a lethal power one million times the power of the Hiroshima bomb. World-wide military expenditures now exceed \$650 billion per year. The two nuclear superpowers, the U.S.S.R. and U.S.A., which account for more than 90 percent of all nuclear weapons, each has enough nuclear power to destroy the other 14 times over. But it is not just the super-

numbers confronting us are overwhelming, but hold a different kind of terror.

□ 570 million people suffer from hunger or malnourishment.

□ 2 billion people do not have easy access to safe drinking water.

□ 1.5 billion people have little or no access to medical services.

□ 12 million babies die every year before their first birthday.

□ 500 million people have no jobs or are underemployed.

Militarism and deprivation, these are the threats to security. Disarmament and development, these are the great building blocks of security. Is it any wonder that fear, anger, despair now characterize the most thoughtful and concerned citizens as they contemplate a political leadership throughout the world that is steering us into conflict rather than community?

Every politician pays lip service to peace. But the political process, at the international, national, and local levels, is scandalously deficient in creating a society of peace and social justice. If we want a rational basis for survival, we will have to demand it through the control of force and the development of world institutions to deal with existing tensions and basic causes of war.

Just as the threat to global security transcends national boundaries, so too the building of common security is beyond any one nation. The modern problems impeding disarmament and development are transnational and interlocking. They must be settled by multilateral negotiations, not bilateral force. Political and economic security will only be found through a commitment to joint survival, backed up by responsible public policies for the common good of a world constantly becoming more interdependent.

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What have we learned about the full meaning of disparities and insecurity in the world? What strategies should governments employ? I want to point to four studies published in the course of the last decade by renowned international figures, which have had a deep impact on world opinion — even if they have not yet been implemented. These four books ought to be required reading for every serious student of current affairs, for they embody a deep, and readable, understanding of the human condition.

## Partners in Development

Lester B. Pearson

In 1971, a commission of distinguished world leaders, headed by Lester B. Pearson, former Prime Minister of Canada and Nobel Peace laureate, warned that the widening gap between the developed and developing nations had become the central issue of our time. Their report, *Partners in Development*, launched the Second Development Decade. It called for a more co-ordinated international approach to stimulate aid and development policies.

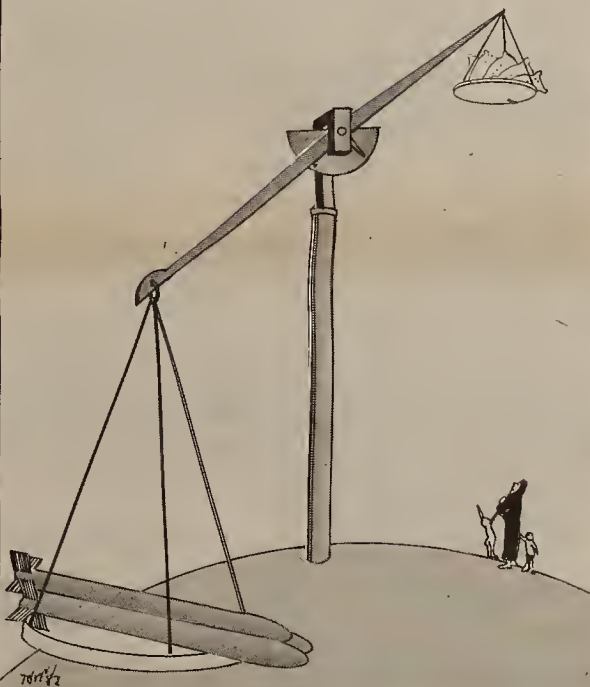
The Pearson Report was the first major political statement to stress that peace can only be ensured by overcoming world hunger, mass misery and the vast disparities between the living conditions of rich and poor. The long-term objective, Pearson said, "is to help the poorer countries to move forward, in their own way, into the

past history to compare with the present build-up of destructive power. The security of people everywhere is threatened by two infernal agents fanning around the globe: militarism and deprivation.

The modern world is painfully off balance, opulently rich in the forces of death, poor in providing for the needs of human lives. Behind the statistical shadows of income disparities, inflation, retarded growth, are hundreds of millions of individuals trapped by shocking neglect. They suffer from hunger, the darkness of illiteracy, illness, desperate poverty. This social deficit adds to world insecurity because the festering problems of today — neglected in favor of armed might — pro-

powers that can trigger war; the ever-rising flood of arms in international trade, now more than \$26 billion per year, has penetrated every region of the world with so-called conventional weaponry that is actually technological murder: high explosives and incendiary agents that produce chemical fireballs, cannon-launched guided projectiles, cluster bombs that detonate into many steel pellets. In war today, nuclear or conventional, destruction is indiscriminate, killpower depersonalized, the distinction between combatant and civilian meaningless.

Against this production of the forces of death, we must measure the use of resources for the forces of life. Again, the



Tom McDonald

Douglas Roche is the Conservative Member of Parliament for Edmonton South and International Chairman of Parliamentarians for World Order.

industrial and technological age so that the world will not become more and more starkly divided between the haves and have-nots, the privileged and the less privileged." And the way to reach this objective was to put into place a strategy for international co-operation.

The Pearson Commission strategy went far beyond aid with these major recommendations:

- Create a framework for free and equitable international trade. In order for developing countries to grow, trade policies of advanced countries must be liberalized. Stabilization of developing countries' earnings through exports of primary commodities must be accomplished along with greater access to markets for manufactured goods.
- Promote mutually beneficial flows of foreign private investment.
- Increase the volume of aid. Official development assistance of the developed countries should reach 7 percent of GNP.
- Meet the problem of mounting debts. The Commission encouraged the creation of new Special Drawing Rights which would relate these lines of credit to the needs of developing countries.

□ Slow the growth of population. The right to knowledge and means of family planning should be available to all. But the full dimensions of the population problem go beyond family planning and require deeper attention. Social policies which reduce the dependence on the family as the sole source of security would lessen the need and desire for large families.

The beginnings of what would later become known as a New International Economic Order, adopted at the United Nations, were contained in the Pearson Report. Looking back on the 1970's, it was a time of wrenching change in the way we think about the world and our place in it. For those who followed the crisis of development, it became abundantly clear that the emerging global community would no longer tolerate the present imbalance in which the North, containing one-quarter of the world's population, earns four-fifths of world income, while the South, representing three-quarters of humanity, receives only one-fifth of the income. Despite some progress made on trade and commodity issues, it was widely acknowledged that the decade closed with a North-South stalemate.

#### North-South:

#### A Program for Survival Willy Brandt

At the start of the Third Development Decade, another high-level international commission, led by Willy Brandt, former Chancellor of the Federal Republic of Germany and also a Nobel Peace laureate, published a report on international development. This time North-South issues were joined to the East-West conflict: reshaping worldwide North-South relations is crucial to the future of mankind and equal in importance to stopping the arms race; this would be "the greatest challenge to mankind for the remainder of this century." The report, *North-South: A Program for Survival*, is aimed at stimulating the world economy in the 1980's and 1990's in the interest of all the world's people. The Brandt Report stimulated the unprecedented North-South Summit of 22 world leaders, co-chaired by President Lopez Portillo of Mexico and Prime Minister Pierre Trudeau of Canada, who met in Cancun, Mexico in October 1981.

Besides the involvement of Brandt himself, the eminence and practical background in politics, business and labor of the 18 commissioners, lends weight to the recommendations. The commission included Edward Heath, former Prime Minister of Britain, Olof Palme, recently re-elected Prime Minister of Sweden, and Shridath Ramphal, Commonwealth Secretary-General.

Insisting that the world faces "much greater dangers" than at any time since the

Second World War, Brandt called for a fundamental change in relations between North and South as well as between East and West. The world is a unity, and we must begin to act as fellow members who depend on one another.

To promote genuine development and self-sustaining growth in the 1980's and 1990's, the Commission set out a program of priorities:

- Priority Needs of the Poorest. A major initiative in favor of the poverty belts of Africa and Asia.
- Abolition of Hunger. Greater food production, intensified agricultural development, and measures for international food security.
- Commodities. A Common Fund to stabilize prices of primary commodity exports at a remunerative level needs adequate support.
- Manufactures. The North should reverse the present trend towards protecting its industries against competition from the Third World, and promote instead a process of industrial adjustment.
- Transnational Technology and Mineral Development. Improved international investment regulations would enable developing countries to benefit from the expertise and resources of transnational corporations.
- Reform of the Monetary System. A key element in international policies to increase monetary stability is to relate Special Drawing Rights to the financial needs of the South.

□ A New Approach to Development Finance. A re-affirmation of the importance of reaching 7 percent of GNP in Official Development Assistance; the current \$20 billion figure should consequently be doubled. A system of universal and automatic contributions related to international trade, military expenditures, and future revenues from sea-bed minerals, would be a significant step towards co-management of the world economy. The World Bank, regional development banks and IMF should broaden their decision-making basis, and a World Development Fund started, leading eventually to a system of international taxation.

In a section on Disarmament and Development, Brandt said the world needs a more comprehensive understanding of security which would be less restricted to the purely military aspects. True security cannot be achieved by a mounting build-up of weapons but only by providing "global co-operation to ensure a sustainable biological environment, and sustainable prosperity based on equitably shared resources." Much of the insecurity in the world, he said, is connected with the divisions between rich and poor countries. "In any case, there is a moral link between the vast spending on arms and the disgracefully low spending on measures to remove hunger and ill-health in the Third World."

#### Disarmament and Development Inga Thorsson

The linkage between disarmament and development was the substance of a study by a U.N.-appointed group of 27 experts from every area of the world, headed by Inga Thorsson, Under-Secretary of State, Sweden. The Canadian member was Bernard Wood, Director, North South Institute; the Canadian government financed a popular version of the report, entitled *Safe and Sound: Disarmament and Development in the Eighties* by Clyde Sanger (Deneau Publishers, Ottawa \$8.95).

The Thorsson group concluded:

"The world has a choice. It can continue to pursue the arms race, or it can move with deliberate speed towards a more sustainable economic and political order. It cannot do both...The arms race and development are in a competitive relationship, both in terms of resources and also in the vital dimension of attitudes and perceptions...A compelling appeal can be made to the economic self-interest of states to reduce military expenditure and reallocate resources to development."

Mrs. Thorsson quotes with approval the linkage established 30 years ago by President Eisenhower, who said: "Every gun that is made, every warship launched, every rocket fired, signifies, in a final sense, a theft from those who hunger and are not fed, from those who are cold and are not clothed." In this same spirit, the Brandt Report emphasized that one-half of 1 percent of one year's military expenditures would pay for all the farm equipment to increase food production and approach self-sufficiency in food-deficit, low-income countries by 1990. Mrs. Thorsson denies that the Eisenhower-Brandt juxtaposition of disarmament and development is merely conventional. "Rather," she told the U.N. when she presented her report in 1981, "it focuses our attention on the historical fact that governments have, over the past 30 years, spent vast resources on armaments, resources which — on grounds of morality, equal human justice, enlightened self-interest — ought to have been directed to ending world hunger and building for human and material development."

By taking a broader approach to the problem of security, the Thorsson group has defined a "dynamic triangular relationship" between disarmament, development and security. The purpose of national security is to secure the independence and sovereignty of the national state, the freedom and the means to develop economically, socially and culturally — which is precisely what we mean by

development. Security is threatened by reduction in economic growth, ecological stresses and resource scarcities, and the morally unacceptable and politically hazardous polarization of wealth and poverty.

The earth's carrying capacity is well able to provide for the basic needs of the world's entire population, and progress towards a more equitable economic order could be made at a politically acceptable pace. But the arms race itself becomes a threat to security. Thus, the Group argues that general and complete disarmament under effective international control, particularly nuclear disarmament, would directly enhance security.

#### Common Security: A Blueprint for Survival Olof Palme

The Thorsson theme is repeated in yet another high-level international study *Common Security: A Blueprint for Survival* (Simon and Schuster, New York, \$5.95). A 16-member Independent Commission on Disarmament and Security Issues, composed of internationally known government officials and politicians from Western, Eastern and Third World nations, and headed by Olof Palme, proposed an extensive list of immediate initiatives to reverse the spiralling arms race and halt the march of governments "toward the brink of a new

## Person to Chair Academic Freedom and Tenure Committee

The Canadian Association of University Teachers solicits nominations for the position of Person Chairing, Academic Freedom and Tenure Committee. Term of office is three years.

The nominee must be a member of CAUT and must be nominated by another member of the association. The nominee should have a good understanding of the principles of academic freedom and tenure and experience in handling the grievances of faculty members.

Nominations must be accompanied by a curriculum vitae and written agreement of the candidate to serve. Nominations are requested by March 31, 1983. They should be accompanied by a brief statement of why the nominator feels the nominee is qualified for the position.

Nominations should be sent to James Foulks, Person Chairing, Elections and Resolutions Committee, CAUT, 75 Albert Street, Ottawa, Ontario K1P 5E7.

## CAUT ACPU

### Président du comité de la liberté universitaire et de la permanence de l'emploi

L'Association canadienne des professeurs d'université sollicite des candidatures au poste de Président du comité de la liberté universitaire et de la permanence de l'emploi. Durée du mandat: 3 ans.

Le candidat doit être membre de l'ACPU et doit être proposé par un autre membre de l'Association. Le candidat doit bien connaître les principes de la liberté universitaire et de la permanence de l'emploi et être habitué à s'occuper des griefs des professeurs.

Les candidatures doivent être accompagnées d'un curriculum vitae et de l'engagement par écrit du candidat à occuper le poste. Les candidatures doivent être accompagnées d'un bref exposé des raisons pour lesquelles leur promoteur estime le candidat apte à occuper le poste.

La correspondance doit être adressée à James Foulks, président, Comité des élections et résolutions, ACPU, 75 rue Albert, porte 1001, Ottawa, Ontario K1P 5E7.

abyss." As Brandt and Thorsson had done, the Palme Commission emphasized that the increase in military spending threatens the economic security of all countries. The sacrifice of human, material and technological resources required by military expenditures of \$650 billion is more than the entire income of 1.5 billion people living in the 50 poorest countries.

The Palme Commission's principal recommendation was the removal of battlefield nuclear weapons from Central Europe. Procedures to strengthen the Security Council's capacity to pre-empt conflicts were advocated, including improved capabilities for U.N. peacekeeping. These proposals, Palme said, "are based on the principle of common security."

"We are convinced that there would be no victors in nuclear war and that the idea of fighting a limited nuclear war is dangerous. In the nuclear age, states cannot achieve security through competition in arms. They must co-operate to attain the limitations, reduction and eventual abolition of arms. Furthermore, they must develop procedures to resolve conflicts peacefully and stress those modes of national behaviour which are consistent with the achievement of common security through co-operative methods."

In short, Palme argued that the concept of common security must replace the present policies of deterrence. Nations can only find security in co-operation and not at each other's expense. This principle of com-

mon security applies to economic as well as to military security. Thus, his report converged on the same understanding of common survival in the global community outlined by Brandt and Thorsson — and first expressed by Pearson. Palme drove the point home:

"Countries are joined together by economic interdependence as well as by the threat of destruction."

Common security for global survival. North-South mutuality. Partnerships. Disarmament and Development. These are now the powerful themes of the '80s.

Of course, politics has not caught up with the new demands of the human community. The North-South Summit in Mexico talked about development needs but did not start the long-awaited process of global economic negotiations. UNSOD I and II have defined very well the gravity of the arms race, but could not agree on time frames or even a process for disarmament. It is fashionable to blame the United Nations for the failures of these huge spectacular conferences. But the "failure" lies at the doorstep of the major nations of the world who are mired in mistrust, conflict, insecurity and resort to force, physical and fiscal. At the end of UNSOD II, Ismat Kittani, president of the General Assembly, levelled a telling criticism of international relations today:

"Nations cannot repeatedly ignore the rule of law, by-pass the United Nations, have continued recourse to the use of force, and then turn around and expect this institution — which they have weakened and damaged by their actions — to function effectively in solving problems, and aid in the creation of a disarmed and tranquil world living in peace and justice."

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In a world so divided and dangerous, the primary object of Canadian foreign policy must surely be the building of conditions for peace. Too many still define foreign policy in terms of self-interest, as if self-interest does not include vigorous actions to promote disarmament and development. Of course, a foreign policy, to be realistic, must be an extension of our domestic goals. Because politicians and the public are still insufficiently convinced of the new realism of the global community, this will require a re-defining of the national interest.

The present moment is not conducive to lifting foreign policy to these higher levels of global concern. The anger and divisiveness in Canada are deep; the very real and politically explosive problems of excessively high interest rates, inflation, unemployment, bankruptcies, falling production — all at the same time — have driven everyone inwards for very compelling reasons. At precisely the moment Canada's voice and actions are needed internationally, our attention is on domestic concerns. This is sadly ironic because the longer each country maintains policies motivated by short-range domestic considerations, the greater will be the deleterious impact of the malfunctioning world economy. How can the world economy recover when the industrial capacity of the North is underused, causing high unemployment, while the South is in urgent need of goods that the North could produce?

Closing the rich-poor gap is no longer just a matter of striving for social justice, though that goal is still paramount. It is also essential to the continued development of the industrialized North. Stopping the arms race is not just a spiritual desire (although I believe the stockpiling of nuclear bombs is a crime against God and humanity); it is essential for world survival.

The establishing of global institutions capable of preventing war and promoting development is today's practical need. Some form of world law is essential to resolve major international conflicts without violence and to retain the human and material resources needed to redress the global problems which confront us. If world law is still beyond our reach, a new sense of world order is not. Canadians can promote world order by reaching out to peoples around the world with a foreign policy built on development and disarmament as the two great building blocks of peace.

Of course, the Canadian government has a range of policies in these two areas.

In disarmament, Canada's policy is rooted in the Strategy of Suffocation elaborated by Prime Minister Trudeau at UNSOD I. This strategy has four points: a comprehensive nuclear test ban; a ban on flight-testing of delivery vehicles; prohibition of all production of fissionable material for weapons purposes; a cut in military budgets. Since there has been no international agreement on any of these points, the government has now enfolded the Strategy of Suffocation into what is called a Policy of Stabilization, which actually permits a country to build its nuclear stocks even while negotiations to reduce them are going on. This is precisely the position of the two superpowers: escalating the arms race and negotiating in Geneva at the same time.

The Policy of Stabilization thus permits Canada to allow the U.S. to test the new Cruise missile delivery system in Canada. Canadians are divided on this, but the government has taken the position that, having agreed to NATO's decision to

deploy Cruise and Pershing missiles in Europe in 1983 to counter the Soviet's SS-20 missiles targeted on Western Europe, Canada must support the testing. The U.S. has, to date, rejected a global nuclear freeze, despite enormous pressures building up inside the country for a freeze, and Canada has also. Canada claims to have renounced nuclear weapons; it will be difficult to substantiate this in the light of Litton Industries in Toronto producing the guidance system for the Cruise, and the delivery vehicle being tested along the Alberta-Saskatchewan border.

In development, Canada has given general assent to the International Development Strategy, approved by the U.N. in 1980, leading to drawn-out preparations for global economic negotiations on the five major agenda items: food and raw materials, trade, energy, development assistance, and international finance. Canada played a leading role at the Cancun Summit and has done much brokerage work behind the scenes to bring the Reagan administration at least to the point of agreeing that global negotiations are "a major political objective."

The budget for Official Development Assistance — spent mainly by the Canadian International Development Agency — has grown to \$1.4 billion (about 2 percent of the federal budget), but this is still only 43 percent of GNP, a long way from the 7 percent attained by such development-minded countries as Sweden and the Netherlands.

The government endorsed the "broad thrust" of a Parliamentary Task Force on North-South Relations, which called for greater and more substantial Canadian involvement in development issues. But new tariffs and import quotas, in response to domestic pressures, have put Canada in a protectionist stance. The independent North-South Institute gave Canada a failing mark after conducting an analysis of the implementation of the 21 points in the Five-Year Strategy for International Development Co-operation, 1975-80. The government has yet to produce a Strategy for the present five-year period.

In both fields, disarmament and development, the words — and I believe the intentions — of the government are to have Canada play a responsible role. But the actual performance — given the inherent strength and middle-power leadership potential of Canada — is modest at best. There are undoubtedly many Canadians who want their government to play a stronger, more creative, role in the new global issues, but, as an active politician, I am bound to say that their voice and pressure are slight when weighed against the clamour of domestic concerns.

The fantastic advances in science and technology could, if we had the political will, ensure a life of human dignity for everyone, not just the privileged few. We are entering a totally new period in our planet's history. For the first time we have the opportunity to bring about a better life in larger freedom for all the world's people. We are now a dynamic world community, capable of sustaining life on a global level.

That ought to provide the motivation for a great public effort to build the framework of peace. It ought to impel us to make a great leap in our thinking about profound issues of public policy, from parish to planet. Some have made this breakthrough in thinking, but most have not. Why?

There is no magic solution to development and disarmament, no one person, no one plan to save us. That is why the final paragraph of Willy Brandt's introduction to the Brandt Report is so important and takes on a deeper meaning every day.

"The shaping of our common future is much too important to be left to governments and experts alone. Therefore, our appeal goes to youth, to women's and labour movements; to political, intellectual and religious leaders; to scientists and educators; to technicians and managers; to members of the rural and business communities. May they all try to understand and to conduct their affairs in the light of this new challenge."

## Academic Freedom and Tenure Committee Call for Nominations

The Committee on Academic Freedom and Tenure solicits nominations for membership on the Committee.

Term of office for Committee members is three years. Members of the Committee are elected by the Board on the recommendation of the Academic Freedom and Tenure Committee, who strive for an appropriate balance in terms of geographical representation, discipline and experience.

The Committee deals with grievances from faculty members at institutions with associations affiliated to the CAUT. In addition, the Committee is concerned with the promulgation of policy statements and guidelines on tenure, academic freedom, and on proper procedures for determining terms and conditions of employment.

Nominations to the Academic Freedom and Tenure Committee should be sent to James Foulks, Person Chairing, Elections and Resolutions Committee and are requested by March 31, 1983, together with an indication of willingness to serve and a brief biographical statement on the candidate's academic background and experience in faculty association activities and academic freedom matters. CAUT, 75 Albert Street, Suite 1001, Ottawa, Ontario K1P 5E7.

## CAUT ACPU Le Comité de la liberté universitaire et de la permanence de l'emploi Appel de candidatures

Le Comité de la liberté universitaire et de la permanence de l'emploi demande qu'on propose des candidats appelés à faire partie de ses cadres.

Le mandat des membres du Comité est de trois ans. Les membres de Comité sont nommés par le Comité exécutif, sur la recommandation du Comité de la liberté universitaire et de la permanence de l'emploi, qui s'efforce d'assurer un juste équilibre sous le rapport de la représentation géographique, des disciplines et de l'expérience.

Le Comité s'occupe des griefs des professeurs des institutions qui comptent une association affiliée à l'ACPU. En outre, le Comité voit à la promulgation de déclarations de principes et de directives touchant la titularisation, la liberté universitaire, les procédures à suivre pour déterminer les conditions d'emploi, etc.

Les noms de personnes à nommer au Comité de la liberté universitaire et de la permanence de l'emploi devraient être communiqués à James Foulks, président, Comité des élections et résolutions. Les candidatures doivent être envoyées pour le 31 mars 1983. Il faut joindre le consentement par écrit du candidat à exercer sa charge et une brève notice biographique indiquant ses antécédents universitaires et l'expérience qu'il a des activités d'une association de professeurs et des questions de liberté universitaire. ACPU, 75 rue Albert, porte 1001, Ottawa, Ontario K1P 5E7.

# Peace research in Canadian universities

by Derek Paul

Peace research is a subject area which is difficult to define and I prefer to let peace researchers define or declare themselves. Nevertheless, there is a strong social conscience developing in these troubled times which selects out various topics as being of immediate importance, and which today form a substantial part of peace research. They include the following:

□ searching for new ways of approaching the matter of arms control and disarmament;

□ looking into the prevention of wars, including monitoring and early warning systems;

□ researching improved international peacekeeping, along guidelines already set down in the McCloy-Zorin agreement in March 1961;

□ improving on current proposals for verification of arms control and disarmament treaties.

The list could go on. Equally important, if not quite as pressing, are the host of longer term questions concerning education, television, and other areas where attitudes are formed. It may be that we cannot have real improvements in international security, including major disarmament of weapons of mass destruction, without widespread attitude changes in society.

## Heart of problem

The sociology of where we are coming from and whither we are going is so much at the heart of the problem of war and peace, life and death, that probably one should survey the work of every sociologist and many others in the social sciences in order to obtain a complete picture of peace research in Canadian universities. This would however be a time consuming task.

P. I. Arnopoulos has recently made a survey of people who were thought to be engaged in peace research.<sup>1</sup> The survey lists not more than about 50 people, by no means all of whom are in universities. No major peace research institute was identified in any Canadian university. The article, with its appendix listing individuals engaged in peace research, will hopefully soon be available to interested people by writing direct to the author.

R. B. Byers has recently written an article contrasting and comparing the viewpoints and approaches of strategists and peace researchers in the field of arms control and disarmament.<sup>2</sup> Since both groups in question have access to the same data, one might hope that their conclusions would be similar, though this is often not the case.

What Byers does identify, however, is a class of moderates in each camp who tend to see eye to eye, but especially so when the world appears to be strongly threatened by aggressive policies and strategies, and approaches to arms control which are either unrealistic or insincere. Byers' paper suggests that the strategists and peace researchers would do well to read each other's literature.

## Little government support

Peace research in Canada has never had specific and direct government support on a general scale. However, much research is supported by the Social Sciences and Humanities Research Council as well as other Councils, so that peace research is not

specifically excluded, either.

The important pioneers of peace research in Canada, Norman Alcock and his wife and co-workers, did so outside the university scene, and always were obliged to underpay both themselves and their staff. In 1981 the Alcocks' "Canadian Peace Research Institute" (C.P.R.I.) closed. The individuals who worked with the Alcocks are now widely scattered, but Hannah and Alan Newcombe continue to operate their small institute in Dundas, Ontario, with good effect. However, this is also outside the university scene. When looking at universities we must return to the efforts of individuals.

## Bibliography of research

In 1981 Kohler *et al.*<sup>3</sup> produced a bibliography of Canadian research on arms control and disarmament. In a section of their report, they survey ongoing research in which one can identify 15 researchers who are now at 13 different universities or colleges. Most are in political science, though there is at least one economist. Several are graduate students. The exclusively social science aspect of this work reminded me of the programme in International Relations at the University of Toronto, which is dominated by political science, economics and history. (Such a programme necessarily has some peace-education aspects). Furthermore, Robert Spencer, director of the Centre for International Studies at the University of Toronto, is also an economist, and although peace research is not the primary goal of the Centre, Dr. Spencer co-edited a recent volume on arms control.<sup>4</sup>

All of the above, including a detailed survey of Kohler *et al.*'s bibliography, suggests that not much peace research is being carried out by physical scientists within Canadian universities, nor by geographers, psychologists, psychiatrists and others who undoubtedly could contribute much. Norman Alcock and the Newcombes are physical scientists, and it is significant that they were obliged to quit "the establishment" in order to carry out peace research. Within the universities, there are several scientists who are Pugwash participants and who contribute papers to the International Pugwash Conferences, as well as letters and articles for the popular press. But these contributions do not really amount to very much peace research. Rather few articles in refereed journals and conference proceedings have come from these few individuals.

## Proposal for ISMA

Perhaps now things are beginning to change. A good example signalling such change is the proposal for Canadian involvement in an International Satellite Monitoring Agency (I.S.M.A.). The draft proposal was researched by T. C. Clark and L. E. H. Trainor, both physical scientists at the University of Toronto. Before long, J. C. Polanyi, chemist and for long a Pugwash participant and supporter of rational steps to disarmament, and others supported this proposal in various ways. Finally a brief<sup>5</sup> was submitted to the Parliamentary Committee on Defence and External Affairs, whose report<sup>6</sup> carries the I.S.M.A. proposal as a strong recommendation to the Canadian Government.

It is not outside the rules for a physical scientist to apply for an SSHRC grant for peace research, and hopefully some will apply for such grants. Grants monies should also be more plentiful from the Department

of External Affairs, Arms Control and Disarmament Division, than in the past.

In Toronto a new corporation, Science for Peace, was formed in 1981, and is reaching out across Canada for membership in all fields of science and scholarship. Many of the directors of Science for Peace are university people. The organization, which co-sponsored the I.S.M.A. proposal, hopes to be able to sponsor some further peace research before long.

Another reason for optimism regarding the involvement of physical scientists is the decision of McMaster University to award honorary degrees to the Newcombes (congratulations Alan and Hannah): perhaps this will be the signal for progress in peace research at McMaster, an establishment noted for its sciences.

The weakness of much work on arms control and disarmament is the unwillingness of researchers to look far enough ahead into the future. If arms controllers have been unable to do this, then at least some effort has been made in the field of education for peace. Here we find leadership coming from inside the universities; one example is the Canadian Peace Research and Education Association (President: M. V. Naidu, political scientist at

Brandon University). An example outside the universities is the Reford-McCandless International Consultants Programme "Introducing the World", sponsored by the Ontario Institute for Studies in Education.

It is certainly time for more people to take a long-term view, but shaping or even imagining the long-term future is almost nobody's forte or predilection. There continues to be, even in Pugwash discussions, a strong reluctance to confront and discuss really basic problems, those which lie at the very root of our inability to come to terms with the changing world in a rational and humane way.

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# The sage of the nuclear age

by Michael Harris

Armageddon has never had a kindlier Cassandra. At 81, Dr. Linus Pauling, who was visiting Halifax on his five-city Canadian peace tour, looks like a character actor whose forte is Dickensian grandfathers. In fact, the man with the wisps of unruly white hair and apple cheeks is one of the world's great scientists. In 1954 he won the Nobel Prize for chemistry. Nine years later he was awarded the Nobel Peace Prize. Although the Swedish Academy had another double laureate in its history, Marie Curie, Dr. Pauling was the first to receive two unshared prizes.

"When I won my first prize, I was just learning, having a good time. The Nobel was a wonderful bonus. But the Peace Prize meant more to me. It came from doing work I wasn't especially eager to do. And I received a lot of trouble from it, a lot of criticism."

Dr. Pauling's Peace Prize was awarded in recognition of his efforts to secure a partial nuclear test ban treaty between the Soviet Union and the United States in the early sixties.

As a chemist he had become alarmed about the effects of the 1957 atmospheric testing of nuclear weapons which he believed was linked to birth defects and cancer in humans. His concern led him to write a book, *No More War*, in 1958. "I remember when my wife and I went to the White House and President Kennedy shook my hand and told me he hoped I would continue expressing my views. I have tried."

Indeed, As a scientist, Dr. Pauling was close to determining the structure of DNA — the building block of life — when he decided that half his time had to go to the

peace movement. The ghastly arithmetic of the world's nuclear stockpile had put his task on a doomsday schedule. "You know, the super-powers have 150 times the nuclear arsenal required to kill everyone on earth. And the newest weapons almost control themselves. We take frightening risks every day."

Dr. Pauling says the Soviets understand those risks better than North Americans, perhaps because their manpower losses in the last war were 50 times those of the United States. He is critical of President Reagan's attempt to use the arms race to ruin the Soviet economy, which has only half the gross national product of its U.S. counterpart.

"Mr. Reagan said that by bankrupting the Soviets, Marxism and Leninism would be left on the ash-heap of history. Well, after the first year of that policy it's America that's morally, spiritually, as well as economically on the brink of ruin."

Dr. Pauling thinks that, with an existing nuclear arsenal of 30,000 weapons, the United States should close the bomb factories, not produce 15,000 new weapons, as the Reagan Administration plans to do. "We are the ones who have taken the antagonistic posture in disarmament talks so it is America's responsibility to lead the way back to some kind of reasonable world."

At this summer's 25th Pugwash Conference, which brought together 36 eminent scientists, diplomats and strategic experts opposed to nuclear weapons, Dr. Pauling produced a resolution calling for the immediate unilateral declaration of a nuclear

Professor Paul is with the Department of Physics at the University of Toronto.

# An international Satellite Monitoring Agency

by John Polanyi

*This article describes a proposal for a type of peace-keeping force in space, the 'ISMA'. The proposed Agency has been the subject of an extensive and favourable study by an international group of governmental experts at the UN. The proposal is one that, in the author's view, should commend itself to Canada since politically and technologically we are well qualified to contribute. It is regrettable that the Canadian government was not a party to the UN study of this proposal. There is still time for us to contribute in an important fashion to the realization of ISMA. It would be a peculiar failure of imagination on our part, were we not to do so. Mr. Trudeau in his address to the UN this summer committed Canada to renewed efforts to make outer space the preserve of peace, and also to increased research into the technology of arms control verification; ISMA could assist in the achievement of both these goals.*

*Caution is used as an excuse for inaction, but inaction is itself dangerous in a world of towering weaponry and spreading nuclear capability.*

## An historical perspective

□ Ignorance of what happens in potentially hostile regions of the world fosters suspicion. Preparations are made for the "worst case." These exaggerated preparations further heighten suspicion, and hence military preparations on the opposing side. Recognizing that fear engendered by ignorance fuels the arms race, President Eisenhower suggested world-wide "Open Skies" surveillance by aircraft in 1955.

□ Though "Open Skies" failed to materialize, open access to outer space is in the process of achieving Eisenhower's goal. For two decades the USA and USSR have been surveying each other's territory, day and night, from an increasingly numerous and sophisticated array of satellites. Their right to use these "national technical means" for mutual inspection is enshrined in well-established treaties extending back a decade (to Salt I). This is one of the few and precious changes favourable to the prospects of peace that have taken place in the past twenty years.

## The proposal for ISMA

□ This proposal was discussed in private forums (such as the Pugwash Conferences) as early as 1977, but was first formalized by France in a speech by President Valéry Giscard d'Estaing at the U.N. Special Session on Disarmament in May 1978. The U.N. thereafter adopted a resolution (113 votes to 0, with the USA and USSR abstaining) to have the proposal studied in time for the 1982 U.N. session. The study was duly made, and was released in August 1982 (UN Report A/AC 206/14). This 120 page report is, as intended, an "in-depth study." It deals with the technical, legal and financial implications of the establishment of an ISMA. The 13 governmental experts who made the study were unanimous in their approval of the ISMA concept, and in their verdict that it was "both possible and feasible."

□ The proposal calls for a step by step approach on the part of a consortium of nations (unspecified) linked to the U.N. (as is the International Atomic Energy Authority, IAEA) to supplement the present bilateral US-USSR space-surveillance with a multi-lateral surveillance system. The objectives would be to provide credible verification of arms control agreements (which could be simply agreements to demilitarize a buffer zone), and also to provide reassurance in some tense region of the world that forces are not being readied for attack.

□ The rationale for wishing to spread the responsibility for such verification and reassurance activities is that a broader group of nations can operate in areas and in questions where the super-powers clearly have a stake, but in which other nations are less directly implicated. Recognition of the validity of this concept has led to the procedures for selecting participants in U.N. peacekeeping forces; the super-powers are never 'artificially' and so far as possible, the arms control agreements are reached from disinterested parties. The consortium that operates or advises ISMA should be wide enough that it can place the task of photointerpretation and the responsibility for ar-

iving at a verdict in the hands of a balanced or (better still) impartial group, given the nature of the specific monitoring task. The IAEA has largely succeeded in this.

□ It should be noted that ISMA is not envisaged as having a free licence to collect information and publicize it (for example information that could be of advantage to political and economic competitors of the nations being over-flown); the agency would in general respond to specific requests for information and would limit itself to these tasks. The agency's activities are, therefore, predicated upon the idea that there are troubled areas in the world where the antagonists wish to avoid settling their differences by war, or can be induced by their allies to experiment with this sane and civilized option. Given the increasing awareness of the horrors of modern warfare, and the global dangers which stem from regional conflicts, this appears to be a reasonable supposition.

□ If ISMA is to be operating significantly before the end of this decade it must rent times on the cameras that the superpowers already have in space. These cameras can be shared. Under the LANDSAT program of the US they are, in fact, already shared for low-resolution surveillance. The resolution of 1-3 metres required for ISMA (i.e., ability to see objects of this size) represents, today, medium resolution.

It will require a groundswell of opinion (foreshadowed in the U.N. vote cited above) and cogent arguments to persuade one or both of the super-powers that there is a real gain for the prospects of world peace in permitting access by a suitable consortium to the medium-resolution cameras at times when these are stationed above selected regions of the globe. ISMA would then receive the raw data (directly from the electronic "camera" by radio telemetry) and process it into pictures which its own experts could analyze.

In the unlikely event that the super-powers are united in withholding all co-operation, ISMA can make use of the medium-resolution cameras of other nations (France for example), as these facilities become available in the coming few years. The cost to ISMA would run into several hundred million dollars per annum for this type of activity.

□ ISMA would aim to have its own cameras in the sky within a decade. This cost for "hardware" in this case would amount to about a billion dollars spread over a number of years.

□ These costs seem daunting, but we should recall that where the aim is to reduce pollution or conserve resources the expenditure of sums of this order of magnitude over similar periods of time is a commonplace. Twentieth century warfare — if we wish to consider it in these terms — represents the most hazardous source of pollution, and most barbaric squandering of resources. If it escalates into a nuclear war it represents a crime against future generations.

## Canada and ISMA

Canada has been involved in every U.N. peace-keeping force since the first. Canada has a space-technology commitment of approximately \$100 million p.a. Canada voted in favour of the U.N. study of ISMA. Canada has frequently spoken at the U.N. about the crucial role of verification in negotiating arms control and thereby "suffocating the arms race."

Despite this, Canada was not represented on the thirteen nation U.N. Group of Governmental Experts making a detailed study of this proposal, nor so far as the public is aware are Canadian experts studying this proposal independently of the U.N. Group. It is time that we became actively involved in the ISMA debate.

The Canadian public has shown pride and interest in Canada's involvement in peace-keeping, and also in space technology. We have an opportunity now to focus this public support in a striking new way. Not only is this politically sensible, but it helps to discharge our profound obligation to the maintenance of peace, which should take precedence over many lesser problems — but so seldom seen.

Professor Polanyi is with the Department of Chemistry at the University of Toronto.

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freeze by either of the super-powers. The freeze would be followed by treaty negotiations to confirm it and then reductions in the nuclear arsenals of both countries.

Dr. Pauling's rationale is that the changing technology of nuclear weapons, particularly the Cruise missile, is on the brink of making a negotiated de-escalation of the arms race impossible. He says the Cruise is unverifiable in its deployment because of its small size and unique guidance system. He thinks that if the Cruise is deployed by the fall of 1983, the present schedule, the Soviets will have no alternative but to build a parallel system of their own. And since the advance warning of an attack by the Cruise is a mere four minutes, that would

leave both sides with a twitchy finger on their nuclear triggers.

And so, with the four horsemen of the apocalypse riding down on humanity, the 81-year-old eminence ends our interview to get on with the business at hand. It is time to head into the press conference, where he will preach the simple gospel of Einstein and Russell to the assembled media of Halifax: if we are to survive, "Mankind must learn to think in a new way."

But this day, his fabled reputation has lured only a handful of journalists from the palpable drudgery of layoffs, budgets and the price of gas. In this, the deadliest race, it is as if the starting pistol has been fired in a cavern of the moon.

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# A blow to peace: the meekness of Pugwash

by Flora Lewis

While the police were showering people with water cannon and per-fuming them with thousands of canisters of tear gas because they stood on the streets of Warsaw this past September, an international gathering of scientists was drawing up another big appeal against nuclear weapons.

The group, which met in the Polish Government's Council of Ministers building, is called the Pugwash Conference, after the village in Nova Scotia where scientists from East and West first began these talks 25 years ago. They formed in response to a call from Bertrand Russell and Albert Einstein to alert the world to the nuclear danger. It was in the depths of the cold war and the idea was that scientists at least should have an objective view and be able to talk to each other.

It wasn't exactly the fault of Pugwash that it convened in Warsaw under martial law. The site was agreed upon years ago. But the U.S. Pugwash group was embarrassed enough to refuse to participate, and those Americans who attended went as individuals. Many who did turn up from Europe and the United States were appalled to find that the regime was making active use of their presence to legitimize the military junta.

They pleaded for a modest public statement dissociating the movement from what's going on in Poland. The Western organizers, supported of course by the Soviet delegation, which included at least two known KGB officials, blandly refused on grounds that Pugwash shouldn't get into "politics," and must maintain communications at the worst of times.

Ben Ter Veer, the head of the militant Dutch Inter-Church Peace Movement, was so angry he said, "This is my first Pugwash meeting and it's probably my last one." Some delegates wearing their badges in the streets were spat upon by passers-by. A middle-aged poorly dressed Pole, hearing me speak English, came up to say: "Pugwash is stupid to be here now. The West is stupid." Waving his arm at the implacable formations of policemen and the exploding canisters, he added, "This will come to you the way you're going."

Even worse, to my mind, than the cringing acquiescence of the conference leadership to Communist requests for silence was the effective suppression of an open letter from Andrei Sakharov. The persecuted atomic physicist had smuggled from his exile at Gorky an appeal for Pugwash to speak up on behalf of other imprisoned scientists in the Soviet Union. He criticized those in Western peace movements who take "a position that is one-sided and therefore futile and even dangerous." Pugwash people, he said, sound like Soviet

officials and "behave like well-disciplined functionaries of one gigantic bureaucratic machine."

Maintaining his own commitment against nuclear war and for disarmament negotiations, Mr. Sakharov said, "The same standards should be applied to both sides." He asked for open discussion of his letter. No one has better credentials to address an East-West scientific meeting. But after some confusion and a charge of censorship, the letter was distributed privately with no chance for debate. It will not be published with the conference documents.

The Pugwash Council, which expressed gratitude to Gen. Wojciech Jaruzelski for receiving its members for two hours, made "fools and tools of themselves," said a Canadian delegate. That is just the point. Such people act as though the Russians were doing them a big favor by attending their meetings and must on no account be offended by truths. Unlike Mr. Sakharov, they don't risk prison or a psychiatric ward but at worst a snub.

Their gag is self-inflicted. There is no more "dialogue" or "East-West communication" when one side covers and nods than when people don't talk at all. On the grounds of keeping "contact open," the contact established is that between the lord and the serf. This attitude does the cause of peace a disservice by suggesting it comes only at the price of suppressing even a statement of Western values. There is something demeaning about proclaiming the "moral responsibility" of scientists not to devise terrible new weapons and then rejecting a call to support fellow scientists who are prisoners of conscience.

The pusillanimous silence serves to endorse the use of force, not to prevent it. It takes so little to shut these people up. Moscow has only to threaten to be insulted.

Mr. Ter Veer, whose group openly supports the Polish union Solidarity, is a full-fledged peacekeeper who seeks a nuclear-free zone in Europe. But he also argues that human rights are inseparable from that cause. He presented the principles of the Dutch movement as "the right to life and the right to life as a human being." One may disagree with his military judgment, but at least he has the courage to say something more than "da" when he talks to the Russians.

As Mr. Sakharov said in his letter, there is no alternative to arms control negotiations but global destruction. The effort to contain conflict must go on. And the way to do it is the way he urges, strengthening conventional defence so as to rely less on nuclear arms and, above all, daring to talk back. It takes two to dialogue.

New York Times Service

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## Correction

CAUT Bulletin, October, "Foreign students: playing the numbers game," page 8, column 3, line 4 should have read: "While university faculty are no freer than the rest of us from the racist undercurrents of Canadian society."

## Pugwash/UNESCO Symposium, Ajaccio, Corsica, 19-23 February 1982 CONCLUSIONS AND RECOMMENDATIONS

1. The nuclear arms race, which has resulted in the creation of an unprecedented and awesome potential for destruction, is one of the outcomes of the remarkable advances in science and technology during the past few decades. The achievements of science have momentous implications in all aspects of life of the world community, including a radical change of traditional concepts of security and national power. Yet, the call in the Russell-Einstein Manifesto that a new way of thinking is essential if mankind is to survive in the new situation that has arisen from the progress of science has largely gone unheeded. National security is still measured by the strength of military arsenals, and super power is equated with the capacity to inflict unimaginable damage on an adversary. As a consequence, the nuclear arms race accelerates its pace and engulfs an increasing number of nations, although everybody knows that it may lead to the annihilation of civilization.

2. The arms race is primarily the product of political forces. But scientists themselves contribute to this disastrous trend in world affairs. About half a million scientists and technologists — a high proportion of the total scientific manpower — are directly employed on military research and development. They are continually devising new means of destruction, making the existence of the human species on this planet ever more precarious. In particular, the nuclear arms race feeds on the continuous input of scientific innovation, and there is a growing belief that the momentum of this arms race is determined by the actions of scientists. This belief is exaggerated; a multitude of factors, interacting with each other, is involved, commonly expressed as the military-industrial complex. But the introduction of any new weapon is an irreversible step, and in this sense the role of the scientists in the arms race is of crucial importance.

3. This role of scientists is contrary to their traditional calling. The objectives of scientific endeavour should be a service to mankind, helping to better the fate of man and raise material and cultural standards. The basic unmet needs of a majority of the people in the world present a challenge great enough to warrant a huge and sustained effort by scientists. For an enormous effort of scientists to be instead directed towards wholesale destruction, to return to a state of primitive savagery among the survivors of a nuclear war, is an unforgivable perversion of science.

4. This world would be a much safer place if scientists in all countries would simply refuse to engage in military research. While realizing that, as a professional group, the scientists alone cannot easily act in complete isolation from their political and economic context, we implore those who are employed in the military R & D establishments to ponder on the social implications of their work and then leave it to their conscience to dictate their further conduct.

5. In any case, there is an urgent task for all scientists to help in stopping and reversing the arms race, and to work for genuine disarmament measures, ultimately leading to general and complete disarmament. Scientists have already demonstrated that their efforts in these directions can be fruitful and effective. Movements of scientists — such as the Pugwash Conferences on Science and World Affairs, which provide a forum for objective and informative debate between scientists from East and West, North and South — have made valuable contributions to the international negotiations on arms control. These negotiations have led to few agreements, but without them the arms race might have acquired even more catastrophic dimensions. The work of institutes of peace research provides factual information of great value to those concerned with the implementation of disarmament measures.

6. This urgent task can no longer be left to the small number of scientists actively involved in the effort to stem the arms race. It should be the duty of all scientists to acquaint themselves with these issues. There is a tremendous scope for scientists to counteract the arms race and seek means to reduce the threat of a nuclear war. If the drive towards avoidance of war is to make headway, it must involve a much larger number of scientists: an increase by at least an order of magnitude is necessary to make the number comparable with that of the scientists involved in military R & D.

7. We call on the scientific community to give their time and thought towards these objectives. A determined effort is needed to promote collaboration for peaceful purposes in fields of research where there is now competition for destructive purposes; to elaborate specific steps of arms reduction; to give early warning on the dangers of new developments; to collaborate with current medical campaigns in informing the public of the likely consequences of a nuclear war; to take part in disarmament education.

8. Specifically, we recommend the following tasks for scientists.

☐ maintain contact between scientists from different social and economic systems, drawing on the common interests and values of the international scientific community, and explore through such contacts all possibilities of resolving conflicts and fostering progress towards disarmament;

☐ study the technological aspects of the arms race so as to be able to offer expert advice on these matters to decision makers and the general public;

☐ support efforts to limit and eventually stop the nuclear arms race, in particular to conclude without delay a Comprehensive Test-Ban Treaty;

☐ monitor destabilizing developments in the arms race and warn the public about them;

☐ contribute to the ongoing research on the economic consequences of disarmament so as to be able to allay fears about unemployment and to find alternative opportunities for the utilization of resources and manpower at present employed on military projects;

☐ participate in national and international meetings of scientists to debate and seek means of disseminating the findings of the studies mentioned above;

☐ encourage the setting up of an international committee of scientists to analyze the consequences of the nuclear arms race and report their conclusions;

☐ address lay audiences and mass media and provide them with factual information about the dangers and likely outcome of a nuclear war;

☐ use their influence in scientific academies and institutions to induce them to devote some of their activities and budgets to the above issues;

☐ urge editors of scientific journals to provide space for discussions on those issues;

☐ promote disarmament education and, in particular, the inclusion of disarmament-related issues in the curricula of schools and universities.



Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world. *Whereas*, disregard, and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind, and the advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people. *Whereas* it is essential, if man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression, that human rights should be protected by the rule of the law. *Whereas* it is



*Soon the test of nonconformity may be teaching the wrong subjects instead of holding the wrong beliefs or saying the wrong things, and those of us who cannot transform ourselves into teachers of petroleum geology, electrical engineering or computer science may find ourselves redundant.*

## Academic freedom and the Canadian professor

By Michiel Horn

Today's economic climate and the changing labour market may push governments in Canada to adopt measures that are a profound menace to our universities, measures that would seriously damage academic freedom.

Academic freedom has often been unsafe. This century has been spotted with incidents and controversies that demonstrate the vulnerability of our universities and of the professoriate.

My concern here is with the academic freedom of the individual professor in Canada and some past and present threats to that freedom, culminating in today's potential crisis. I want to emphasize, however, that the freedom of the individual is closely linked to the autonomy of the institution in which he teaches. One can imagine fully autonomous institutions in which the academic freedom of the individual professor is nevertheless in danger. It is much more difficult to imagine that freedom being safe within a university subject to direct outside interference in its internal affairs.

Like Caesar's Gaul, the freedom of the professor is divided into three parts. First is the freedom to teach, carry on research and publish. Second is the freedom to express oneself on matters of curriculum, academic standards, university governance and the like. The third part is the freedom of professor as citizen to address issues of public policy, politics, religion, morality, and so on. This third freedom has, in Canada, been the most obviously embattled, and there have been questions whether, properly considered, it is part of academic freedom at all. Let me therefore state right away that professors do not enjoy some special sort of immunity or protection when they exercise their right as citizens. On the other hand, they should not be subjected to academic discipline when they speak as citizens, provided they have made it clear that they are doing so.

The freedom of the professor is subject to limitations, as indeed all freedom is if it is not to become licence. Among them are the necessity to honour decisions by

legitimate academic bodies, to use balance in lecturing and writing, to use seemingly language in expressing one's views, and to avoid deliberately implicating one's institution when one is speaking or acting as a private citizen.

However, no persons are beyond the limits of academic freedom by virtue simply of the opinions they hold. It is easy to say that fanatics are out of place as either teachers or scholars. But fanaticism is often in the eye of the beholder or the ear of the listener. Until we have foolproof tests of it on their merits. There must be clear and convincing evidence, assessed by a duly constituted committee of inquiry, that a certain professor has abused his position by turning his teaching or scholarship into an unbalanced argument for a single point of view. In that case it may be necessary and desirable to remove that person from his position. Lesser cases of breaches of

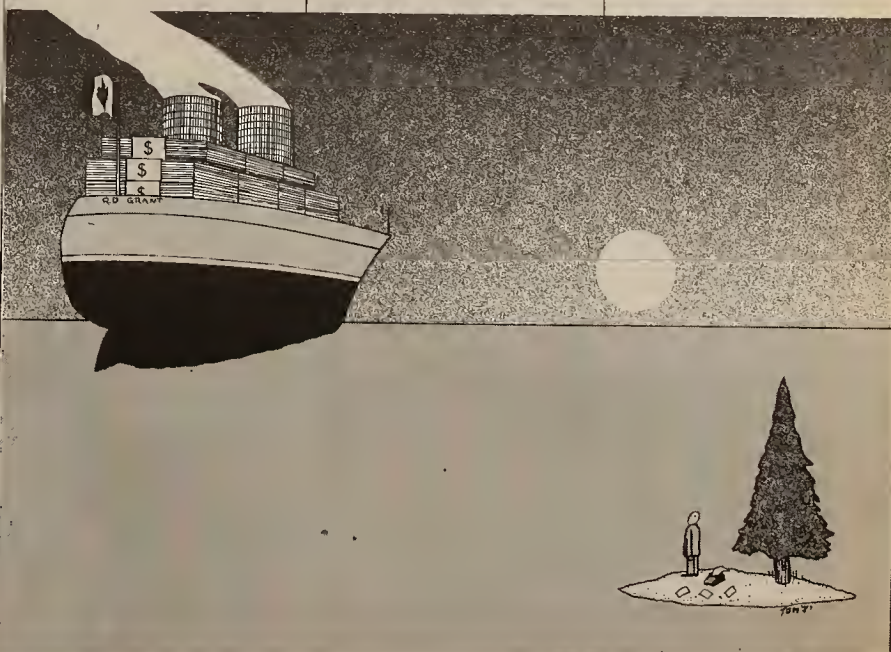
academic good behavior should be dealt with in less drastic ways.

The threats to the freedom of the professor can be internal or external. Not infrequently they are linked. The financial dependence of Canadian universities, whether on church bodies, governments or private benefactors, helped in the past to create a climate in the institutions that was generally unfavorable, if not to the spirit of independent inquiry, at least to the free expression of findings and opinions. Perhaps nothing constitutes a more insidious threat to academic freedom than a perceived need to please, or at least not to offend. The American social philosopher Ernest van den Haag writes:

Restrictions of academic freedom cannot be measured by the number of cases publicly debated. Preventive restriction — the semi-conscious adoption by professors, chairmen, and administrators of standards they believe will not offend public opinion — is probably

more important, and it is not measurable. Preventive restriction, which makes selection and promotion depend upon criteria other than professional qualifications — all too often on conformity to current academic or social fashions — has restricted academic freedom far more than formal outside threats to it.

Preventive restriction is likely to be endemic wherever universities and those working in them have strong reason to regard the society, and more particularly the funding agencies, as a god or gods to be propitiated, or in the fashion that some pioneers regarded aboriginal peoples who supplied them with food but of whose goodwill they could never be sure. Professor Northrop Frye has identified the "garrison mentality" as a characteristic of the Canadian imagination as reflected in our literature. The garrison needs to protect itself and needs solidarity in that enterprise. Certainly the garrison mentality was evident



Professor Horn is with the Department of History at Glendon College, York University. The article is based on a paper presented at the Academic Freedom Conference held at Memorial University of Newfoundland in February 1982, the proceedings of which will be published. The paper was dedicated to the memory of Canadian historian David Alexander.



essential to promote the development of friendly relations between nations. Whereas the peoples of the United Nations have in the Charter reaffirmed their faith in fundamental human rights, in the dignity and worth of the human person and in the equal rights of men and women and have determined to promote social progress and better standards of life in larger freedom. Whereas Member States have pledged themselves to achieve, in co-operation with the United Nations, the promotion of universal respect for and observance of human rights and fundamental freedoms. Whereas a common understanding of these rights and freedoms is of the greatest importance for the full realization of this pledge. Now therefore, THE GENERAL



in Canadian universities into the recent past. One manifestation of it was a large degree of prevent restriction.

I take issue, therefore, with Dr. Murray Ross, who wrote some years ago: "On the whole it can be said that up to 1960 there was a healthy degree of freedom in Canadian universities..." He immediately adds, however, that "there did not seem to be many professors in Canada who were inclined to test the degree that would be tolerated." The reason is not, as one might infer from reading Ross, that most Canadian professors had little to say that was controversial or were abnormally timid in claiming the right to say it. The reason was a widespread recognition that to excite controversy gained few rewards and might expose one to some form of retribution.

I am "...tempted to tick off a number of salaries of some men who seem to take more interest in interfering in matters of public policy and public controversy than they do in the work for which they are paid."

Ontario Premier Howard Ferguson

Important as it is, prevent restriction makes a less exciting topic than the description of some of the clearcut attacks on academic freedom in the past. Those attacks, furthermore, also help to clarify an important cause of prevent restriction. A well-publicized attack on academic freedom had a demonstration effect: it very probably helped to ensure a cautious prudence at institutions and among many individuals not themselves under attack.

Before the 1960's there were three main kinds of institutions in Canada, provincial, church-supported, and secular private. External threats to the different kinds came mainly from or through a provincial government in the first instance, a church body in the second, and wealthy alumni or benefactors in the third. In each case the power of the purse (students or their parents paid less than half the cost of university education) made the threat real. This was all the more true because with that power usually came the right to nominate members of the governing board.

An instructive example is the University of Toronto, certainly the most prestigious of the public universities, and the one which seems to have been the model for other provincial universities with respect to academic freedom. Until 1906 the University suffered through a long and unhappy period of direct government control. The University of Toronto Act of that year was intended to end this state of affairs. However, according to Professor Claude Bissell:

The board that emerged was not so much a bulwark against government and the public as a conduit by which government and the public could directly reach and influence the university. Almost all the appointments, which were made by the government, came from the upper reaches of business, and many of the members were close to the government in power. They thought of the university, not as an intellectual and cultural centre with its own independent life, but as a government organization for providing an essential professional training and for turning raw adolescents into respectable citizens.

What did this mean in practice? It was certainly designed to keep the political involvement of professors to a minimum. Indeed, in 1922 Sir Robert Falconer, president of the University of Toronto and one of Canada's most esteemed educationists, asserted the freedom of the professor to teach and carry on research, but at the ex-

pense of exercising his rights as a citizen. It was "expedient" that someone teaching in a provincial university should neither be active in "party politics" nor express himself on "burning political questions." Injudiciousness in such matters might result in harm to the offender's institution.

Falconer's warnings take on added significance when we consider some of the incidents involving the University of Toronto and politicians in the 1920's and 1930's. In 1929, for example, Howard Ferguson, Conservative Premier of Ontario and Minister of Education, told Canon H.J. Cody, Chairman of the Board and later Falconer's successor in the presidency, that he felt "...tempted to tick off a number of salaries of some men who seem to take more interest in interfering in matters of public policy and public controversy than they do in the work for which they are paid." That the men in question — they were the political economists C.A. Fay, H.A. Innis and U.J. Urwick, and the historian F.H. Underhill — might be addressing issues on which they were expert interested Ferguson but little. He probably thought that, unless they supported the prevailing wisdom, professors should be seen and not heard.

In early 1931, when 68 members of the teaching staff sent an open letter to the four Toronto newspapers deploring police interference with allegedly communistic meetings, the result was a furore that echoed through the city. Although the 68 had not indicated their institutional affiliations, several of them were prominent enough that the press had no trouble making the connection to the university and its colleges. There were loud demands that the professors mind their own business and that the university discipline them. One prominent member of the Board of Governors, Sir Joseph Flavelle, reported to a correspondent that "a very, very influential member of the Legislature" had asked him what the Governors were "going to do about this damn nonsense of the University Professors." The 68, Flavelle thought, had forgotten their duty to the university not to stir up people needlessly:

The University must be supported. It must carry public opinion whereby it can be adequately housed and maintained. Every teacher in the University is a trustee for the institution, that no act of his resulting from hasty and unreflective impulse shall jeopardize the progress and development of the University....

Beyond disavowing the statement of the 68, the Board ultimately did nothing, but Falconer did speak to six of the signatories in order to impress on them the inexpediency of arousing the hostility of voters or the legislators to the university.

The controversy over the letter lasted a month, and centred not only on the impropriety of professors criticizing the police and defending alleged communists, but also on the damage that heterodox teachers might do to impressionable minds. One wonders with what feelings senior administrators read the following excerpts from a letter that Premier George Henry wrote in March of 1931:

...Unfortunately, from time to time there arises some discussion as to some of the teaching that is carried on in the University. I have a daughter taking an arts course and she brings home ideas to her Mother who gets very concerned about it at times. I sometimes feel that there are discussions in the classes with youths that are being trained that would be better confined to more mature minds.

I am looking forward to seeing a more direct touch with the affairs of the University and hope that...things will right themselves and that the confidence of the public will not be disturbed by similar incidents in the future.

The incident in question was an article that had appeared in the Varsity in February claiming that many professors and even some students were atheists and agnostics. Some of the wilder demands that the offending professors be rooted out and fired could be ignored, but expressions of prime ministerial concern constituted a graver threat to freedom within the university.

"Usually when we find communistic activities, we find among them leading spokesmen who are associated with our universities."

Ontario Premier Mitchell Hepburn

In 1936 George Henry, then leader of the opposition, asked the Minister of Education what he intended to do about an unnamed academic "who goes around the province making radical speeches and styling himself as a professor of the University of Toronto." Members of the government asked for specifics and wondered if the Conservatives wanted to limit freedom of speech. Three years later, in April 1939, the Liberal Premier Mitchell Hepburn was in the vanguard of those who called for the disciplining of the Trinity College classicist George Grube for making comments critical of Canadian re-armament. "Usually when we find communistic activities, we find among them leading spokesmen who are associated with our universities," Hepburn noted with regret. It was time the University of Toronto took appropriate action. When President Cody pointed out to the press that not a penny of Grube's salary came from the provincial grant and that he was beyond the jurisdiction of the Board of Governors, Hepburn threatened that unless Trinity College disciplined "this foreigner, Grube" — he was born in Belgium — the federation of the college with the university might be revoked or adjusted in some way damaging to the Anglican institution.

Nothing came of this, but Grube did promise the Provost of Trinity in future to be more circumspect in his comments on public affairs. By the time he did so, the attack had already shifted to someone who was unquestionably within the jurisdiction of the Board of Governors, and who more than once since he began teaching at the University of Toronto in 1927 had been at the centre of controversy — the historian and political scientist Frank Underhill. He was the chief drafter of the letter of the 68, and later in 1931 again came to the attention of President Falconer.

"If professors at Toronto must keep their mouths shut in order to preserve the autonomy of the University then that autonomy is already lost."

Frank Underhill

Underhill, in writing about politics for the *New Statesman*, had suggested (entirely accurately) that the policies of the R.B. Bennett government in Ottawa were not effective in coping with the Depression. The Conservative morning paper in Toronto, the *Mail and Empire*, held this to be an unacceptably partisan assessment, and urg-



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ed the University to call Underhill to account. This, Falconer wrote to Underhill, was precisely the sort of publicity the university could do without.

Underhill defended himself by pointing out that in Britain and the United States professors could participate in public debate. Besides, "if professors at Toronto must keep their mouths shut in order to preserve the autonomy of the University then that autonomy is already lost. A freedom that cannot be exercised without danger of disastrous consequences is not a real freedom at all. In the midst of all the intolerance which is rampant in the world at present, a University plays a sorry part if it does not raise up its voice for freedom of speech."

Falconer was unpersuaded. "The practice in British Universities or in the privately endowed Universities of the United States cannot be adduced in justification of what may be done in the University of Toronto," he told Underhill. Professors here ought to be satisfied with their freedom to teach. The institution depended heavily on the goodwill of the legislature; it was therefore, he wrote, in rephrasing his remarks of 1922, "not only inexpedient, but dangerous to the well-being of the University" if professors meddled in "party matters."

**"Our youth are instructed by parlour pinks who preach Empire disunity from the cloistered protection of jobs which give them all too much free time."**

Ontario Premier George Drew

Underhill's problem was not only that he was opinionated (he was), but that, in discussing subjects of Canadian history, politics or external relations on which he was admittedly expert, he expressed opinions that annoyed people greatly. His style, deft and delightfully disrespectful, increased his offence among the guardians of conventional wisdom. (Think of him as something of a better-informed and less outrageous Al Fotheringham.) In hot water more than once, he gradually retreated, in his writing about current events and recent history, into increasing anonymity. Indeed, when in April 1939 he was again at the centre of attention, with both Premier Hepburn and the Leader of the Opposition, George Drew, yelling for his scalp, it was because of an isolationist passage he had written four years earlier. Forced to defend himself, Underhill pointed out that he had kept a two-year old promise to President Cuddy to "try to avoid undesirable publicity." He could not guarantee that someone would not again find some excuse to denounce him "as being offensive or disloyal." However, he could be trusted to "do (his) best in future to behave as reasonable men would expect a professor to behave."

But who were these reasonable men? The balance of newspaper opinion in April 1939 ran against Hepburn and Drew, in favour of Underhill, and in defense of the right of professors to speak out on questions of public policy. Were their editors reasonable? Was the economist B.S. Keirstead reasonable when he wrote to Underhill from the University of New Brunswick: "Now that Hepburn has raised the issue of academic freedom I hope the University of Toronto will stand behind you and fight the issue out with him. If Toronto can't do it, I don't believe it can be done by any institution in Canada."

Or was it rather George Drew who was reasonable when he defended himself against a charge by Underhill's friend Alan Plaunt of attempting to suppress free speech? "No question of free speech is involved at all," Drew wrote: "Canada is a British country and those of us who believe that Canada should remain British have a right to say that in our great institutions of learning anti-British doctrines shall not be taught." It was simply unacceptable that "our youth are instructed by parlour pinks who preach Empire disunity from the cloistered protection of jobs which give them all too much free time... It is the duty of those charged with the education of our young people to play their part in making sure that Canada will remain British." We may think Drew was unreasonable, and his attitude a menace to academic freedom, but we have no reason to suppose that he was alone in his opinion.

Underhill got into trouble again in 1940 while speaking at the Couchiching Conference. As a member of a panel seeking to analyze the significance of the Ogdensburg Agreement, signed recently by President Roosevelt and Prime Minister Mackenzie King, Underhill stated that in future Canada's relations with Britain were bound to weaken and those with the United States to strengthen. Some critics, among them former Prime Minister Arthur Meighen, charged that Underhill's comments called the war effort in question, and demanded his dismissal, even his internment. The incident finally brought a majority of the Governors to the view that the University was best off without Underhill. Early in January 1941 an ad hoc committee of the Board tried to persuade him to resign, threatening to fire him if he did not.

Underhill kept his job. But he kept it less because of representations made on his behalf by members of the academic community than because of political pressure applied by high-placed persons in Ottawa. Professor Douglas Francis sees the outcome as "an important victory for academic freedom," inasmuch as it forced those "who believed in academic freedom to clarify their position and to speak out for themselves in support of the cause." Murray Ross takes the outcome as evidence for his view that on the whole, academic freedom was safe in Canada. I am disposed to be more sceptical.

It is worth noting, as Professor Donald Creighton did, that the threat to Underhill's employment was negated by an implicit threat to the University's autonomy by the Ottawa government, a threat that in wartime was real. Had there not been evidence that Underhill enjoyed support in high places, Creighton suggests, he would probably have been let go. Secondly, professors did not become noticeably more outspoken in the two decades following Underhill's well-publicized troubles in 1939-41. His difficulties, in fact, may have deterred others from claiming the full extent of academic freedom, particularly at the provincial institutions.

What of the private universities? They were in the majority before 1960; they present a complicated picture. At risk of oversimplifying, we can say that the major secular institutions, McGill, Queen's, Dalhousie and Western Ontario, did less to discourage their professors from exercising their academic freedom than did the provincial universities. For the church-connected institutions doctrinal issues proved disruptive from time to time, as, for example, at McMaster University during the first and third decades of the century. On the other hand, there was considerable tolerance at least at the Protestant institutions for outspokenness on matters of public policy.

My generalizations hide much detail. It is

essential to refer to the controversial dismissal of Salem Bland from Wesley College (the Methodist antecedent of United College) in Winnipeg in 1917, and the equally controversial dismissal of King Gordon from United Theological College in Montreal in 1933. In both cases financial exigency was the stated reason for dismissal; in both there was strong and, at least in Gordon's case, well-founded suspicion that the radicalism of the professor in question was a major contributing reason.

**"The 'successful' way of life in our universities may be equated with the life of conformity both to doctrine and authority."**

W.H. Alexander

At institutions both secular and religious, boards of trustees, representative mainly of the business and professional communities, exerted subtle or not so subtle pressure towards acquiescence in, if not support for, religious, political or economic orthodoxy. Evidently, the role of a president or principal was crucially important, either in resisting this sort of pressure, or more commonly, in transmitting it. My research suggests that at Queen's and possibly at Dalhousie, little such pressure reached professors directly.

At McGill the pressure was stronger. Frank Scott, the most conspicuous radical on McGill's teaching staff in the 1930s and 1940s, recalls numerous instances of being asked to tone down his statements about public affairs or to reduce his involvement in politics. In 1942 some members of the Board of Governors reportedly tried to prevent his serving as national chairman of the

CCF, but they failed in this. However, he was kept from the deanship of the Faculty of Law long after it should have come to him according to the practices of the Faculty and the University. "Actually the situation suited me admirably," he wrote to me at the time of his retirement: "No one in his right mind wants to be Dean, but he certainly wants even less to belong to a university which discriminates against its staff for political reasons." "Reluctant acquiescence" best sums up the attitude of McGill's Governors and administrators with respect to the few controversial professors on the staff. And, when asked in 1933, the administration cheerfully reported on their opinions to the RCMP!

Until the 1960's the Canadian academic and intellectual worlds were small. People knew each other in spite of the distances, and the grapevine worked well. Thus the difficulties of some professor soon became known outside his department and university. One fascinating example: in 1933 no less a person than R.B. Bennett, a member of the Dalhousie Board of Governors, proposed that the Liberal-leaning political scientist R.A. MacKay be sacked for showing political partisanship in an article written for *Maclean's*. President Carleton Stanley and the Board rejected the proposal and MacKay did not hear about it until later and then only unofficially. Underhill also heard about it, however, from Hugh Keenleyside, a former professor of history at UBC who had joined External Affairs in 1929!

My contention is that occasional stories or rumours of trouble somewhere reinforced or motivated some professors in their quiescence, an attitude that no doubt also suited many of them on temperamental and careerist grounds. This quiescence no doubt affected their teaching and scholarship: prevent restriction extended everywhere. The University of Alberta classicist W.H. Alexander wrote in 1934: "The 'successful' way of life in our universities may be equated



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with the life of conformity both to doctrine and authority." The following year Alexander gained the CCF nomination in the federal constituency of Edmonton West, but had to relinquish it after the University's Board of Governors prohibited its staff from running for Parliament.

Alexander soon left for the University of California; but in 1938 contributed an article to the *Canadian Forum* harshly critical of Canadian universities: "You must never forget that our universities are themselves products of the capitalist system...", he wrote: "They are too respectable either to fight or to tolerate within themselves a fighter." Of Canadians he said: "Our people as a whole and fundamentally have little use for universities except as purveyors to their material comfort, and none at all for academic heretics." Those who wished to change their society were best off staying outside the academy.

**"Our people as a whole and fundamentally have little use for universities except as purveyors to their material comfort, and none at all for academic heretics."**

W.H. Alexander

Alexander's assessment may have been exaggerated to a degree, but of the quiescence of Canadian academics into the 1960's there is no doubt. As late as 1965 the sociologist John Porter was able to write: "It would probably be hard to find another modern political system with such a paucity of participation from its scholars." Porter may have given insufficient weight to the presence of many former professors in the public service of the federal government and the provinces, and even of some of them in active politics. However, most of the former and all of the latter had to leave academe entirely in order to participate in public life.

Porter ascribed the low participation rate by academics to the influence of H.A. Innis, who was opposed to the involvement of scholars in politics and public affairs. I submit that no one man could have had such influence. Nor did one man need to have it. The intellectual atmosphere of most universities contained enough of a menace to the free expression of views to keep most professors prudently silent. Hiring practices excluded the more extreme radicals: Professor Norman Penner has informed me that to the best of his knowledge not a single member of the Communist Party taught at a Canadian university between the wars and into the 1950s.

It is characteristic that the most spectacular case involving academic freedom in the 1950's, the Crowe affair at United College in 1958, came about as a consequence of someone redirecting one of Harry Crowe's private letters to Principal Lockhart's desk. It was only in this squalid way that the administration and governing board got proof of Crowe's disagreement with College policies. This proof brought them to ask for his resignation, thereby triggering the crisis that ultimately led 18 faculty and staff members to leave the College.

What about threats to academic freedom in the more immediate past and in the present? Important changes have taken place in the university world; probably none has been more momentous than the transformation of virtually all universities and colleges, both in English- and in French-Canada, into provincial institutions. Paradoxically, in the light of what I've said about academic freedom at the provincial

universities in the most distant past, the academic freedom of the individual professor expanded in the 1960's and 1970's. This has been particularly noticeable in the second and third areas of freedom I identified, the freedom to participate in and criticize institutional decision-making, and the freedom to participate in politics and public debate.

The main reasons for this were the continuing shortage of qualified teaching staff in the 1960's and an increased tolerance in the society as a whole for unconventional behaviour and opinions. Outside pressure on professors to conform to doctrine or authority relaxed.

Yet all was not well for academic freedom. Occasionally one heard of attempts, mainly by students, to muzzle the expression of unpopular points of view. Inside pressures to conform were still strong; one thinks only on the well-publicized troubles of Simon Fraser University. Speaking at the 1972 annual meeting of the CAUT Council in Vancouver, Professor Archie Malloch, then chairman of the Academic Freedom and Tenure Committee, suggested that a professor's colleagues were now more likely than either administrators or outside groups to interfere with his academic freedom. As I recall he illustrated his comments with a remark made to him by a departmental chairman: "But how will I know a good radical sociologist when I see one?"

Preventive restriction did not disappear, even though academic tenure as a means of protection for unorthodoxy became more efficacious. A few words about tenure in Canada: before the 1960's it typically meant that a professor held his position during the pleasure of the governing board, who acted on the advice of the president or principal. Formal hearings of dismissal by duly constituted committees, at which charges are laid and examined, were not yet features of the academic landscape. Not that dismissals were frequent. H.A. Innis noted acidly in 1936: "There is sufficient truth in the statement that it is impossible to leave a Canadian university except by death or resignation, to evoke general recognition of its accuracy." Though this was only slightly exaggerated, professors may have also recognized that its accuracy was not due to the high measure of protection afforded them by the terms of their employment. During the 1960's, spurred on by a strengthening CAUT, local faculty associations and senates began to turn tenure into what at most if not all Canadian universities it now is: tenure during good behaviour.

**"The most serious complaint that the public has against professors in the matter of tenure is not that professors should not have it, but that having it they should not use their special freedom more vigorously or more vigorously."**

David Braybrooke

It became such through the erection of elaborate structures for the granting of tenure and, where necessary, revoking it. To a generally uninformed and sceptical society, the result was not the protection of academic freedom, which was in any case not a highly regarded objective, but the protection of the lazy and incompetent, or a form of feather-bedding likely to prevent universities from adjusting to changing economic realities.

Even within the university there were questions about what tenure actually did protect. The Dalhousie philosopher David Braybrooke wrote in 1972: "The most serious complaint that the public has against professors in the matter of tenure is not that professors should not have it, but that having it they should not use their special freedom more frequently or more vigorously." More recently the expatriate Canadian John Kenneth Galbraith observed that "terminal laziness (is) a much cherished aspect of academic freedom." If it is, it owes much of its security to the existence of tenure.

**"Terminal laziness (is) a much cherished aspect of academic freedom."**

John Kenneth Galbraith

The current paraphernalia of tenure are sometimes under attack within the academic world because they make life easier for some people who are already too comfortable. The outside attack on tenure, insofar as it is not prompted by similar criticism, or by sheer envy, is part of a broader attack on institutional autonomy and academic freedom. Those are not the purposes of the attack: the purpose is to make the university adjust to new or changed objectives without the expenditure of additional public funds. Dazzled by the mirage of labour market forecasting, policy makers are once more adopting the vocationalist philosophy or, better said, panacea. The universities must adjust their programmes to the changing labour market, we hear, and preferably they must do so in double-quick time.

A story in the *Globe and Mail* in November 1981 states that the federal government is hoping to use the renegotiation of Established Programme Financing in order to ensure that post-secondary education does not give students skills for which there is little demand, instead giving them skills that the country and its economic development presumably need. The reporter comments: "At the first level, that statement is telling students they may find themselves channelled increasingly into subjects such as engineering, economics or sheet-metal working rather than 'wasteful' areas such as classics or political theory." What he considers important is the potential interference with traditional provincial control of education. He spares not a word for the effects on the autonomy, such as it still is, of the universities, or for academic freedom.

Ottawa is not alone in considering means whereby higher education may be more closely linked to the currently perceived demands of the labour market. Take the province in which I work, Ontario. A *Globe and Mail* article on January 6, 1982, reports that education officials are planning an overhaul of the system that will make job training central at all levels, this training to be "for specific jobs that have specific requirements." At time of writing further details were not available. That reform at the university level is in the cards, however, is suggested by the moratorium on fundable new undergraduate programmes announced by the Minister of Colleges and Universities last November.

The wish to link teaching more closely to employment has its counterpart in a growing tendency to direct us to mission-oriented research. Lacking faith in serendipity, some policy makers want to make research funds available only in selected areas, presumably in the hope that scientists

and scholars will come up with 'useful' answers to 'significant' questions. To humanists who can do their research on the cheap this may constitute more of an annoyance than a threat to their academic freedom. In fields where research funds are essential, however, and alternate sources to government funding not available, the threat to academic freedom is strong.

The 19th century German notion of *Lehrfreiheit*, the freedom to teach, very important in the development of our ideas of academic freedom, had its counterpart in the notion of *Lehrfreiheit*, the freedom to learn. (Let us admit that this second notion has made much less headway in Canadian universities than the first, but let us also note that hitherto we have allowed students at least to choose in which fields to major and in which faculties to take their degrees.) For most Canadian professors, living in a political democracy and under the rule of law, the most serious menace in our employment is the loss of it. It was in the past through the threat of dismissal of non-conforming professors that threats to academic freedom in Canada have manifested themselves most starkly. Soon the test of nonconformity may be teaching the wrong subjects instead of holding the wrong beliefs or saying the wrong things. Mark well that this may be a matter not of teaching subjects which students no longer want to take but which policy makers think fewer students should study. Those of us who cannot adjust to the new reality — and how many of us can transform ourselves in to teachers of petroleum geology, electrical engineering, or computer science? — may find ourselves redundant.

Insofar as tenure, particularly in unionized universities, has come to mean a seniority system, that means dismissals will be on the basis of age and length of service. A seniority system will certainly tend to protect some assistant professors who are not of recent vintage but have done nothing to merit further promotion, at the expense of some young associate professors who are inferior to them only in length of service. Thus, paradoxically, tenure may come to compound a threat to the academic freedom that it is intended to safeguard.

**"I fear that Canadian universities will be forced to take some steps on the road to Malta, and that both institutional autonomy and academic freedom will suffer."**

I do not believe that any Canadian province will go as far as Malta has since Dom Mintoff became its Prime Minister eleven years ago. The University of Malta no longer has a Faculty of Arts and Science; the risk of graduating students who could not find employment appropriate to their skills has thus been eliminated. That, of course, is the *reductio ad absurdum* of the vocationalist logic currently influencing official thought in Canada. I do fear, however, that Canadian universities will be forced to take some steps on the road to Malta, and that both institutional autonomy and academic freedom will suffer.

For academic freedom to be safe, the outside funding agencies must resist the temptation to meddle in the internal affairs of the universities. But what if the universities disappoint the hopes and expectations of those supplying the funds? At that point

# BOOKS.LIVRES

**JEROME DESHUSSES**

translated by A.D. Martin Sperry

LIFE ON THE EDGE OF  
IR MAN HISTORY

## The Eighth Night of Creation

The Eighth Night of Creation: Life on the Edge of Human History. Jerome Deshusses. Trans. by A.D. Martin Sperry. Ottawa. Deneau Publishers. 1982. 405 pp.

Classifiable as a commentary on modern civilization, a contribution to the future debate, a reflection on the man-nature relationship, and an anatomy of human ecology, *The Eighth Night of Creation* by a French philosopher, novelist, musician and mathematician is a provocative book of great scope and depth.

Originally entitled *Deliverer Prometheus*, the book surfaced in France in 1978, after twelve years of preparation, as a significant moral anomaly in a philosophical field dominated by an analytic parlour philosophy that Deshusses characterizes as "bordering on the practical joke." In the dystopian tradition of Swift, Dostoevsky, or Orwell, Deshusses curses the world whose image he finds in the pestilential hell fires of Gehenna, the valley of municipal wastes in the historical Jerusalem of Christ's time. In the prophetic tradition of Blakean or Nietzschean apocalypse, he looks ahead to the rise of Albion, the New Jerusalem, the transvaluation of values.

And, even while taking note in a post-Pascalian contemporary vein that everything is both possible and uncertain, he holds in principle to a Hegelianized version of Augustine: *Omnia cooperant in bonum, etiam peccata* ("All things, even sin, work together for Good"). The rhetorical centre of moral gravity lies in the utopian future; the eye is on the next millennium. "Eros, Orpheus, Daedalus are calls, not memories.... The sources lie upstream. They have already touched us, but we have not yet reached them."

In seven chapters whose underpinning objective is to raise awareness of false ideals, hypocrisies, and moral violence and to rehabilitate finalism and Evolution for positive discussion and action, Deshusses presents a detailed review of a double spectacle: Nature dying and Society collapsing. The ambivalent flowering of civilization on the eighth day of creation is wilting in the moral and material agonies of a long night which will swallow everything unless the ninth day is made to dawn through a purification of the human soul. "Like a fetus in the ninth month, Humanity has amassed toxic wastes that make inevitable its emergence into life-giving air — or its death."

## Unbinding Prometheus: death or transfiguration

by John Fekete

The text details an accumulation of horror in a world that lives on pollution and theft. In the course of our suicidal carelessness, forests are consumed, arable land is depleted, deserts expand, oxygen is used up faster than it can be renewed, poisons dumped into water and air are killing the life-sustaining lakes, oceans, and atmosphere. Over 500 species of mammals and birds and over 20,000 species of plants are currently in their death throes, more than twice as many as have disappeared under the pressure of multiplying humanity since the beginning of written history. There is more sulphur in a bottle of wine than in a box of matches, and allergies, skin diseases, heart disease, diabetes, syphilis, salmonellosis, and cancer are dramatically on the rise, as indeed are crimes, mental illnesses and suicides.

On this account, the planet is becoming "even more repulsive morally than physically." Deshusses analyzes frontiers and profits, patriotism, commercialism, militarism, the obscenity of identifying being with having, restricted sexuality, monogamy, patriarchy, the nuclear family, and relations of hierarchy, along with the associated political systems (both capitalist and socialist) and the legitimating discourses of education science, art and religion, as features of a global medium within which the world approaches death.

The diagnostic finding of this vigorous analysis is "a still bestial Humanity whose ideas, standards, and laws are all lies."

Deshusses's argument exorciates self-interest. It searches for reason and passion mediated through sharing and community, these latter to serve as indispensable keys to survival. Like Murray Bookchin's *Toward an Ecological Society*, reviewed in December 1981 in the *CAUT Bulletin*, *The Eighth Day of Creation* belongs to a crucial minority view within ecological discussions in its insistence on the urgency of connecting the destruction of nature with the distortions of social values and institutions and in linking the resurrection of nature and the resurrection of human life.

To the extent that revolutionary perspectives have failed to take account of the ecological threat and environmentalists have failed to address global objectives of associated human life, they miss the unity of man and nature and assist the momentum of madness. The strategic agenda includes not only the prolongation of nature but also, inseparably, the abolition of the family, censorship, profitability, and the military world order in favour of non-hierarchical society, non-disciplinary education, non-lunatic work, non-conformist philosophy, economic equality, disarmament, sexual freedom, and a practise of love as a disinterested exchange bet-

ween two or more souls. At the same time, Deshusses is convinced that the required broad consensus on fundamental ends is not remotely in the making, and that only the catastrophic pains of incipient extinction will hold out the bare prospect of eleventh hour awakening.

Meanwhile, as the human becomes engulfed in global genocide and suicide, now well beyond the Roman *homo homini lupus* ("Man is a wolf for Man"), Deshusses proposes that since there can be no methods for attaining objectives that we reject, the decisive struggle is about substantive rationality. "We can do nothing but work tirelessly to discredit the counter-ideals that prevent the ideal from coming into being." In consequence, a larger portion of the text is designed to provide critiques of the limits and falsehoods of science, philosophy and religion, including especially sharp attacks on Marxism and psychoanalysis, with the aim of reorienting thought to favour invention, innovation, improvisation. The "ideology of humility," in particular, incurs vehement Nietzschean contempt for its *ressentiment*, irresponsibility, and arrogance of ignorance.

In the context, the author reworks a large repertoire of conceptual dichotomies, including Mind/Matter, Subject/Object, Time/Space, Cause/Effect, Chance/Necessity, with a view to clearing ground for his programme and prognosis: an evolutionary ascent to self-awareness, to a superreflexive consciousness that is on our horizon and that suggests a revolution "completely different from any that Life has known since the beginning of its enormously long history," and one in which the stakes, risks, costs, gains, and changes all promise to be greater than ever before. It is ecological violence that is preparing to enforce this greatest of turning points in history, but it is an evolutionary leap to meta-understanding that is the *sine qua non* for accomplishing it.

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## Canadian pluralism undermines nation's legitimacy

by C. Michael MacMillan

**Neo-Feudalism: The Canadian Dilemma**  
Gerard S. Vano, Toronto: House of Anansi Press, 1981, pp. 152.

The author's central purpose in *Neo-Feudalism: The Canadian Dilemma*, is to refute the conventional view of Canada as an essentially liberal society and to argue that Canada has developed within the context of feudal pluralism. Such a perspective allows us to properly understand the main lines of Canadian socio-political development and prevents the dilemma that its natural evolution may lead to national disintegration.

Vano maintains that the conventional interpretations of the Canadian experience have been founded on faulty assumptions. The staples theorists, for instance, have

failed because they wrongly assumed that the mere presence of a business class in Canada was indicative of a measure of liberalization. In general, he finds a failure to distinguish between the rhetoric and political structures of liberalism, and its functional reality.

To rectify this, he develops his concept of a socio-ideological spectrum from the left (individualism and universalism) to the right (communitarianism and pluralism). The term socio-ideology is used to distinguish ideologies which are integrated with the prevailing economic system as opposed to theoretical ideologies, such as Marxism, which are not. The left pole is best articulated in classical liberalism, which is characterized by atomistic individualism, civil rights and "an inordinate respect for monetary power, the free market system and the sanctity of private property". It is epitomized by the nine-

teenth century United States which is "the only truly modern country". The opposite pole, pluralism, is depicted as analogous to feudalism, wherein society is defined not in terms of individuals but in terms of limited group interests. Medieval Europe and the present nations of Eastern Europe, with their intense ethnic loyalties, are examples of this orientation.

This socio-ideological spectrum becomes the basis for the author's challenge to the validity of the conventional liberal framework for the study of ideology and history, the traditional approach to ideological distinctions, and the reinterpretation of Canadian development. In his schema, Marxism is placed on the right since it reflects a limited group interest (the urban working class). Accordingly, classical liberalism, the only truly progressive and

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# BOOKS. LIVRES

## Canadian pluralism...p. 23

universal ideology, occupies the left.

The socio-ideological spectrum is primarily used to analyze Canada's evolution, specifically in relation to classical liberalism. The argument is advanced that while Canada has absorbed the rhetoric of liberalism and the political institutions associated with it, nevertheless it has not liberalized in any fundamental fashion. Unlike the Anglo-American nations, Canadian ideology has never been integrated with economics, nor established a comparable singular value system emphasizing civil rights and the sanctity of private property.

In addition, the Canadian socio-ideology has tended to preserve entrenched and exclusive interests, whether French-Canadian ethnicity or Anglo-dominated staples-based big business — i.e. to institutionalize pluralism. One important influence in this development has been the French-Canadian conservative political force, which brought a pluralist feudal orientation first to Canadian Conservatism and then to Canadian Liberalism.

This has inexorably led to the central crisis of Canada, which is the failure to create a common value system which is above exclusive community loyalties of ethnicity, class or region. This pluralist conception of Canada, manifested in such policies as bilingualism and multiculturalism, encourages exclusive,

limited loyalties and thus undermines the legitimacy of the Canadian nation. The decline of traditional integrative forces (such as the east-west trade) eliminate counter-balances to the rising sense of ethnicity and regionalism in the country and raise the prospect of the disintegration of Canada. The Canadian dilemma seems to be that we are not liberal enough to rise above exclusive interests.

The solution lies in the development of an indigenous Canadian liberalism. Vano perceives the emergence of a more truly liberal Canadianism as a result of the Americanization process via the branch-plant economy. This need not be mere Americanization but could be a "Canadianization of the liberal fragment". The emergence of this classical liberalism can be the solution to our most pressing internal problems and also the instrument of decolonization. The emerging choice for Canada is between a form of liberal nationalism or a late blooming feudalism with its disintegrative potential.

The apparently stark options posed by the author invite a number of questions, the most obvious being the assumption that Canadian pluralism is inherently self-destructive. As the Swiss experience attests, plural societies with subnational loyalties, can be stable and successful. Furthermore, it is not readily apparent that Canadian loyalties are really all that exclusive. Many French-speaking Canadians in Quebec (to cite his most dramatic example) indicate a dual loyalty — to Quebec and to Canada. If this is typical of the Canadian experience, then there is reason to doubt the existence of a fundamental dilemma.

This leads to the question of where Canada fits on this socio-ideological spectrum. This is, the author admits, "an imponderable dilemma." He suggests that it is to the conceptual right of the Anglo-American world, but falls short of the extreme right pole. This imprecision is to be expected since only one pole of the spectrum, occupied by the American socio-ideology, is brought sharply into focus and serves as the on-going reference point. While England and France are included in the Anglo-American world, it is not clear where they fit in relation to the U.S. or Canada.

Rather than being an exploration of neo-feudalism, the analysis actually explores Canada's deviations from American liberalism. This could be perfectly legitimate, since the American experience has repeatedly served as a reference point for examinations of Canadian political culture. However, it is rather difficult to then accept the conclusion that Canada, despite its liberal rhetoric, liberal-democratic institutions, and a population who, he notes, "tend to favour liberal egalitarianism in law and politics" is fundamentally illiberal. Such patterns suggest the more commonplace conclusion that Canada is simply not in the same liberal mould as the United States, but is still within the Anglo-American liberal tradition.

Despite these criticisms, Vano presents an interesting interpretation of the Canadian experience that is internally consistent and clearly articulated. While one might disagree with his assumptions and interpretations, this book is a thought-provoking treatment of some important issues and for that reason would be a useful addition to senior level courses in political science, history, and Canadian studies.

Professor MacMillan is with the Department of Political Studies at Mount Saint Vincent University.

## Courageous attack on difficult theme

by E.M. Goldstein

On Teaching Thinking. Bayne Logan and Cindy Reid. Runge Press, Pembroke, Ont.

It must be pointed out from the beginning of this short review that the book produced by Bayne Logan and Cindy Reid has little to do with any skinnerian didactic schemes. On the contrary, while remaining within the programming orientations of the Ontario Ministry of Education, the authors attempted a clarification of both the rationale and the review of the literature to end by offering a model for assessment of higher order thought processes.

In their work, Logan and Reid wisely shied away from the speculative paths of philosophy. They also strenuously avoided terms such as "productive thinking," "creating problem solving," "Piagetian operations," "inductive/deductive reasoning," "thinking skills," which seem to be interchangeable and suggest little precision for the serious student. Thus it became evident, for our researchers as for all enthusiastic teachers, that teachers must be clear on specific thinking processes they want their students to develop.

Logan and Reid centred their research on the Ontario System of Education and the rationale of their work focuses on the:

- renewed importance of the learning process,
- greater involvement of students in planning for their personalized learning and
- development of broad curriculum statements allowed to transcend traditional discipline boundaries and thus to increase interdisciplinarity, on the way to a "total school," an integrated result based on ministerial guidelines.

This rationale was founded on three experts of modern curricular theories — J. Piaget, J.P. Guilford and B.S. Bloom. Logan and Reid deserve great merit for avoiding servile affiliation to any of these three fashionable luminaries, and for reaching a position acceptable for most of our teachers, that all these explanatory or classifying taxonomy theories have little to do and even less to contribute to a more effective actualization of a stage where thinking skills may demonstrate their existence and their operation in the acting student. Our authors strenuously, and sensibly, advocate a belief in teaching activities, if they are to be successful (technique being taken for granted), for skepticism may only lead to failure.

The review of the literature is impressive and as complete as one would want it to be. As far as the model of assessment is concerned, it includes six chapters, namely:

- Factors influencing the Teaching of Critical Thinking
  - Priorities of Teaching Thinking Beliefs, Attitudes and Values of the Teacher
  - Characteristics of Classroom Interaction
  - Assessment of Higher Order Thinking
  - Impediment — Language Patterns of Students
  - Development of Feedback Mechanism
- Logan and Reid suggest that approaching the teaching of critical thinking from the vantage point of methods or behaviors,

alone, will have only a short term effect. "Only when one begins with belief systems, does there appear to exist any long-range results" (cf. p. 154). Ultimately, the teaching of higher and cognitive processes appears to rest on teachers beliefs and "the ways in which those beliefs are implemented and supported" (cf. p. 155).

A rich bibliography of 38 pages completes this volume, produced by the Runge Press, Pembroke, Ontario. The research project was funded under contract by the Ministry of Education Ontario. Owing to this courageous attack on a difficult theme by two distinguished educational scholars of the University of Ottawa, Drs. Logan and Reid, we are witnessing the publication of a book which will mark its valuable existence by becoming compulsory reading in all Canadian Faculties of Education.

Professor Goldstein is with the Faculty of Education at the University of Ottawa.

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## Prometheus...p. 23

In effect, then, in the grand cosmic drama of Evolution played by a host of capitalized personae, Life, seeking its freedom through complexity, opposes Entropy, the universal law of degradation. Deshusses argues that Nature evolves toward Mind, that creation of the *novum* is continuous, and that "the only ideal figure on our horizons is Prometheus," the rebel redeemer. In his argument, the Darwinian 'struggle for life' has a finalist secret: 'struggle, with life as the objective.' It is the ends of this evolutionary movement that he urges us to embrace with unanimity, sharing this objective with a single *anima*, with one single soul, before we differentiate into multiplicity. The means will then follow in open discussion.

"Humanity, in a word, is trapped on all sides simultaneously. It is the enormous living spiral that continues to move upwards. Because we resist this spiral, we see it coming at us in the opposite way: namely as the turn of the screw." Death or transfiguration, then, are our alternatives, at a much higher level than the choice between 'socialism or barbarism' that had been set for an earlier generation.

The book is vigorous and poetic in language, compelling in its moral passion. The reader familiar with European intellectual currents will appreciate Deshusses's daring in deviating radically, again and again, from fashionable commonplaces. It is true that he takes on more than one person is likely to handle with even sophistication; but his erudition is considerable. The two problems with the text that I would highlight raise dilemmas difficult to resolve. The first is the loneliness of the prophet. Unlike Bookchin, who invites our anamnestic solidarity with a long tradition of struggle for freedom and a heritage of forms of freedom on which to improve, Deshusses appears largely disenchanted

with all emancipatory traditions. This may not be unrealistic, but neither is it encouraging.

The second is the style of the prophet. Deshusses is aware that if we could see the physical and moral pollution he details, his data would be superfluous; since we cannot, his argument is received like a fairy tale. Moreover, to curse the world and be heard, one has to raise one's voice; yet the raised voice is likely to be heard as a shrill, unsociable rupture of decorum. Deshusses's voice suffers from its lonely shrillness, yet it deserves to be heard and attended.


It is probably desirable that faith and reason be conjoined and simultaneously embrace irony as a moment of self-awareness, but the extent to which this can be turned into an effective cognitive and rhetorical strategy is open to question and practical experiment. In the meantime, Deshusses's book takes its place as part of our common genetic code exteriorised in cultural artifacts; and its general attitude, which joins a tradition from Pascal to Rolland, Gramsci, and Goldmann, will likely find favour with many readers. It can be summarized as pessimism of the intellect, optimism of the will.

Professor Fekete is with the Department of English Literature at Trent University.

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## Academic freedom...p. 22

it probably matters little that the expectations may have been quite unreasonable.

In the last quarter century governments, federal and provincial, have directed large amounts of money to universities largely because the governments believed that this would encourage rapid economic growth. Universities gratefully accepted the funds and did little to suggest that this expectation could not in the long run be met, nor the one associated with it, that unemployment rates would remain low, or could in any case not be met by educational institutions alone. Under the circumstances it is possible to understand why, beset by economic troubles, the reluctance of governments to meddle in the internal affairs of universities has grown thin.

We may understand it, but we must deplore it. Not only a view of the university dedicated to the pursuit of truth, beauty and goodness is at stake, but our own self-interest as well. Governments may be justified in demanding, as they did after the early 1970's, "more scholar for the dollar." They are entitled to cut back funding, although they should not in the process make it impossible for the universities to tap other sources of income. But they must not seek to determine the internal allocation of already insufficient funds, or the admission criteria and quotas of the universities, in an attempt to secure what they currently believe to be the right scholar for the shrinking dollar.

Unless governments back off, and allow universities to adjust to changing circumstances at their own speed, or unless they are willing to direct additional funds to fields deemed to be of importance, the future of Canadian universities and of academic freedom looks very, very bleak.

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Nominations together with the written agreement of the candidate to serve are requested by March 31, 1983 and should be sent to James Foulks, Person Chairing, Elections and Resolutions Committee, 75 Albert Street, Suite 1001, Ottawa, Ontario K1P 5E7.

A nomination should have the approval and be accompanied by the curriculum vitae of the nominee and a brief statement of the qualifications which suit the nominee to serve.

## Comité de la négociation collective

L'ACPU sollicite des candidatures pour son Comité de la négociation collective. Postes de trois ans commençant mai 1983.

Il faut envoyer les candidatures ainsi que le consentement par écrit des candidats à exercer leur charge pour le 31 mars 1983 à James Foulks, président, Comité des élections et résolutions, ACPU, 75 rue Albert, porte 1001, Ottawa, Ontario K1P 5E7.

Les candidatures doivent être approuvées par les candidats et être accompagnées de leur curriculum vitae et un bref exposé des qualités qui rendent le candidat apte.

## CAUT ACPU Economic Benefits Committee

The CAUT solicits nominations for membership on the Economic Benefits Committee. The term of membership is three years commencing May, 1983. Nominations are requested by March 31, 1983 and should be sent to James Foulks, Person Chairing, Elections and Resolutions Committee, CAUT, 75 Albert Street, Suite 1001, Ottawa, Ontario K1P 5E7.

A nomination should be accompanied by the curriculum vitae of the nominee and indication of his or her willingness to serve.

## Comité des avantages économiques

L'ACPU sollicite des candidatures pour son Comité des avantages économiques. Le mandat des membres vaut pour trois ans commençant mai 1983. Il faut envoyer les candidatures pour le 31 mars 1983 à James Foulks, président, Comité des élections et résolutions, ACPU, 75 rue Albert, porte 1001, Ottawa, Ontario K1P 5E7.

Les candidatures doivent être accompagnées du curriculum vitae des candidats et de leur consentement par écrit à exercer leur charge.

# VACANCIES . POSTES VACANTS

## CAUT BULLETIN ADVERTISEMENT DEADLINES

February — Dec. 23, 1982  
April — Feb. 25, 1983  
May — March 25, 1983  
June — April 29, 1983

## ADMINISTRATIVE POSITIONS

**THE UNIVERSITY OF BRITISH COLUMBIA.** Medical Genetics. Director. The University of B.C. invites applications for the position of Director, Centre for Molecular Genetics. Candidates should have a substantial record of research accomplishments in the area of recombinant DNA approaches to problems of medical significance. The successful applicant will have qualities of leadership and innovation; and will be responsible for building a focus of excellence in this field at the University and for directing an active research program. The Centre is interdisciplinary in nature with several departments (Microbiology, Biochemistry, Medical Genetics, Medicine, etc.) participating. A cross appointment as a

## CAUT ADVERTISING POLICY AND CENSURE

CAUT will carry advertisements from censured universities at the first and second stages of censure only. CAUT refuses ads from universities at the third stage of censure because the Council explicitly recommends that members not take positions at an institution at this stage of censure.

faculty member in one of these departments will be made. This is a tenure track appointment and the position is available on or after July 1983 subject to availability of funds. Salary will be commensurate with experience and qualifications. Curriculum vitae and the names and addresses of three references should be sent to: Dr. P.A. Baird, Professor and Head, Department of Medical Genetics, Rm. No. 222 Westbrook Building, 6174 University Boulevard, University of British Columbia, Vancouver, B.C., Canada, V6T 1W5. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Equal opportunities will be given to male and female applicants.

**DALHOUSIE UNIVERSITY.** Faculty of Health Professions. Director of School of Human Communication Disorders. Associate or Full Professors who wish to take a leading role in the future direction and development of university education and research in Audiology and Speech Pathology are invited to apply for the position of Director of the School of Human Communication Disorders. The School presently offers a two year Master of Science degree in Audiology and Speech

Pathology. These programs serve the four Atlantic Provinces of Canada and have a combined enrolment of 20 students per year. A clinical affiliation agreement exists with the Nova Scotia Hearing and Speech Clinic who provide services throughout the province. Cross appointments exist within the Faculty of Medicine. Candidates must have a doctoral degree and be eligible for membership in the Canadian Speech and Hearing Association. Preference will be given to candidates with clinical and administrative experience and proven research ability. The Director will be expected to undertake some teaching duties. Salary will be dependent on experience and qualifications and will be competitive. This advertisement is directed towards Canadian citizens and permanent residents of Canada. Applications will be received up to January 1983. Please write to: Dr. Robert S. Tonks, Dean, Faculty of Health Professions, Dalhousie University, 1322 Robie Street, Halifax, Nova Scotia, B3H 3J5, Canada. Telephone (902) 424-3327.

**SAINT MARY'S UNIVERSITY.** Department of Economics. Applications are invited for the position of Chairperson, Department of Economics at the associate or full pro-

fessor level. Ph.D. is required. Salary is competitive. Duties include the teaching of graduate and undergraduate courses, research and administration. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Applications will be accepted until position is filled. Enquiries should be directed to: Dr. F.C. Miner, Dean of Commerce, Saint Mary's University, Halifax, Nova Scotia, B3H 3C3.

**UNIVERSITY OF MANITOBA.** Department of Family Studies. Head. Applications are invited for the position of Head, Department of Family Studies. Candidates should have the following qualifications: Ph.D. in individual or family development, family resource management, and/or housing and living environments; demonstrated leadership and administrative abilities; competent college teaching record; and proven record of research. Candidates should possess an understanding of and commitment to family studies as a concept and as a distinct discipline. The head reports to the dean of the Faculty of Human Ecology and is responsible for management of the department and for leadership, co-ordination and participation in the teaching, research and community service activities of the department. The department offers a major at the undergraduate level and a Master's degree at the graduate level. This is a tenure track position. Rank and salary will be commensurate with qualifications and experience. Both men and women are encouraged to apply. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Position effective from July 1, 1983. Applications, including academic credentials, résumé of professional and research qualifications, and the names and addresses of at least three referees should

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be sent to: Dr. Bruce E. McDonald, Oean, Faculty of Human Ecology, University of Manitoba, Winnipeg, Manitoba, R3T 2N2.

**UNIVERSITY OF MANITOBA.** Department of Radiology. Professor and Head. Applications are invited for the position of Professor and Head of the Department of Radiology at the Faculty of Medicine, University of Manitoba. Candidates should have a substantial record and academic achievement in Radiology and extensive experience in teaching and research. The Department is responsible for programs of education at the undergraduate and graduate levels. The Department also co-operates with other clinical departments in the teaching of clinical medicine. Both men and women are encouraged to apply. In accordance with Canadian Immigration requirements, this ad is directed to Canadian citizens and permanent residents of Canada. Applications and nominations should be accompanied by a curriculum vitae and submitted to: Dr. T. J. O'Connell, Chairman, Radiology Search Committee, University of Manitoba, 753 McDermott Avenue, Winnipeg, Manitoba, Canada, R3E 0W3.

**UNIVERSITY OF ALBERTA.** Medicine Faculty of Medicine invites applications for the position of Professor and Chairman, Department of Anaesthesia. The incumbent will also be Chairman of the Department of Anaesthesia of the University of Alberta Hospitals. The position combines the challenging responsibility for the development of the research and teaching programs of the department within the four teaching hospitals of the Faculty and the direction of a busy Anaesthetic Department in the University Hospitals, where there is a large portion of referred patients and tertiary care. The position requires an individual with an excellent academic record and an interest in continuing clinical practice. The University of Alberta is an equal opportunity employer but in accordance with Canadian Immigration requirements, preference will be given to Canadian citizens and permanent residents. Applicants are requested to submit a complete curriculum vitae and three references to: Dr. R.S. Fraser, Associate Dean of Medicine, 13-117 Clinical Sciences Building, University of Alberta, Edmonton, Alberta, T6G 2G3.

**THE UNIVERSITY OF WESTERN ONTARIO.** Registrar. Applications and nominations are invited for the position of Registrar, with the appointment to be effective July 1, 1983. The Registrar is a senior academic administrator reporting directly to the Vice-President (Academic). The Registrar's responsibilities include the administration of the University's admissions, student records, schedules, and some publications; service on numerous Senate Committees; on Senate; and co-operation with Oeans on academic programs and policies. The University of Western Ontario has approximately 20,000 F.T.E. undergraduate and graduate students in 16 different faculties and schools. The University is located in the City of London, which has a population of 250,000 and is approximately 180 km. southwest of Toronto. The closing date for applications and nominations for this position is January 31, 1983. Nominations and applications should be submitted to: Professor J.C. Leith, Vice-President (Academic) and Provost, Stevenson-Lawson Building, The University of Western Ontario, London, Ontario, N6A 5B8. Applicants should include a curriculum vitae and the names of at least three referees. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. An equal opportunity employer.

**UNIVERSITY OF TORONTO.** Faculty of Medicine. University Department: Biochemistry. University Title: Professor and Chairman. Qualifications Required: Ph.D. or M.D. Established record of achievement in research in the discipline. Proven administrative skills. Nature of Outies: To provide academic leadership in research and teaching. Responsible for overall departmental administration. Salary: To be negotiated. Person to Whom Enquiries Should be Sent: Dr. Q.W. Clarke, Associate Dean, Basic Sciences, Faculty of Medicine, University of Toronto, 1 King's College Circle, Toronto, Ontario, M5S 1A8. Effective Date of Appointment: As soon as possible. Closing Date for Receipt of Applications: January 31, 1983. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF OTTAWA.** Chair of Medicine. Applications are invited for the

position of Professor and Chairman of the Department of Medicine, University of Ottawa Medical School. The appointee must have the leadership qualities, the qualifications and the experience to undertake the responsibility for research, undergraduate and postgraduate medical education and the co-ordination of educational activities in the major affiliated teaching hospitals, the Ottawa Civic Hospital, the Ottawa General Hospital, the National Oeance Medical Centre and the Royal Ottawa Regional Rehabilitation Centre. Suitable candidates should be eligible for certification by the Royal College of Physicians and Surgeons of Canada and for licensure by the College of Physicians and Surgeons of Ontario. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. An application, including curriculum vitae and appropriate references should be forwarded prior to February 1, 1983, to: Gilles O. Huet, M.D., Oean, Faculty of Health Sciences, University of Ottawa, Ottawa, Ontario, K1H 8M5.

**UNIVERSITE D'OTTAWA.** Chaire de Médecine. L'Université d'Ottawa ouvre un concours pour le poste de Titulaire et Directeur du département de Médecine. Le candidat choisi aura la responsabilité de voir au développement du programme de recherche. Il devra en plus voir à la surveillance des programmes de formation au niveau prédiplôme et postdoctoral, et à la co-ordination des programmes d'enseignement intégrés dans les hôpitaux affiliés, soit l'Hôpital Général d'Ottawa, l'Hôpital Civique d'Ottawa, le Centre Médical de la Défense Nationale, le Centre Régional de réadaptation de l'Hôpital Royal d'Ottawa. Les candidats qualifiés devront être éligibles au conseil du Collège royal des médecins et chirurgiens du Canada et au permis d'exercer du Collège des médecins et chirurgiens de l'Ontario. Prière de faire parvenir votre curriculum vitae et la liste des références avant le premier février 1983 à l'attention de Gilles O. Huet, M.D., Oean, Faculté des sciences de la santé, Université d'Ottawa, Ottawa, Ontario, K1H 8M5.

**CARLETON UNIVERSITY.** School of Computer Science. Applications are invited for the Directorship of the School of Computer Science for a three-year term beginning July 1, 1983. The appointment will be made in tenure-track position at the level of Professor or Associate Professor. Applicants should hold a Ph.D. in computer science or related discipline. Salary is subject to negotiation. Applications should include a curriculum vitae and the names of three persons for reference. Send applications by January 15, 1983, to the Search Committee for Computer Science, c/o Office of the Oean of Sciences, Carleton University, Ottawa, Ontario, K1S 5B6. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

## ACCOUNTING

**THE UNIVERSITY OF WESTERN ONTARIO.** Faculty of Social Science. Department of Secretarial and Administrative Studies. Accounting. Applications are invited for faculty positions in accounting. Starting date July 1, 1983. Rank and salary will depend on qualifications and experience. A post-graduate degree and/or professional accounting designation is required. Limited-term positions are available for candidates who have not yet undertaken graduate study. A post-graduate degree is preferred for career positions. The ability to teach well is required for all positions. A strong interest in research is desirable. Outies include research and teaching in one or more of the following areas: intermediate accounting, advanced accounting, cost and management accounting, taxation and law. Applications (with Curriculum Vitae and the names of three referees) should be sent to Professor J.H. Stevenson, Chair, Department of Secretarial and Administrative Studies, Faculty of Social Science, Social Science Centre, The University of Western Ontario, London, Ontario, N6A 5C2. Applications will be accepted until the positions are filled. The University encourages both women and men to apply for these positions. Position subject to budget approval. In accordance with Canadian citizens and permanent residents. An equal opportunity employer.

**McMASTER UNIVERSITY.** Distinguished Professorial Chair in Accounting. It is ex-

pected that the holder of the Distinguished Professorial Chair will have an established record as a recognized scholar in accounting. As a senior academic appointee, the holder will be expected to provide leadership in scholarly research activities and in the development of programmes. A Ph.D. or OBA, with teaching and research experience, is required. Salary will be commensurate with the nature of the position and the holder is expected to exceed that of the most senior academic appointments in business. The appointment date is open; however, July 1, 1983 is preferred. Applications should be mailed to: Or. A.Z. Szendrovits, Dean Faculty of Business, McMaster University, 1280 Main Street West, Hamilton, Ontario, L8S 4M4.

## ADMINISTRATIVE STUDIES

**THE UNIVERSITY OF WESTERN ONTARIO.** Faculty of Social Science. Department of Secretarial and Administrative Studies. Administrative Studies. Applications are invited for faculty positions in the Administrative Office Management Studies Program. Starting date July 1, 1983. Rank and salary will depend on qualifications and experience. A post-graduate degree (or registration in a graduate program) and the ability to teach and do research are required. Additional academic or professional qualifications and experience are desirable. Outies include research; teaching in at least two of the following areas: administrative management and procedures, business law, introduction to communication, information theory, administrative information systems, organizational behaviour, human relations, word processing, records management, decision analysis, Pitman shorthand. Applications (with Curriculum Vitae and the names of three referees) should be sent to Professor J.H. Stevenson, Chair, Department of Secretarial and Administrative Studies, Faculty of Social Science, Social Science Centre, The University of Western Ontario, London, Ontario, N6A 5C2. Applications will be accepted until the positions are filled. The University encourages both women and men to apply for these positions. Position subject to budget approval. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. An equal opportunity employer.

## AUDIOLOGY

**DALHOUSIE UNIVERSITY.** Faculty of Health Professions. Director of School of Human Communication Disorders. Associate or Full Professors who wish to take a leading role in the future direction and development of university education and research in Audiology and Speech Pathology are invited to apply for the position of Director of the School of Human Communication Disorders. The School presently offers a two year Master of Science degree in Audiology and in Speech Pathology. These programs serve the four Atlantic Provinces of Canada and have a combined enrolment of 20 students per year. A clinical affiliation agreement exists with the Nova Scotia Hearing and Speech Clinic who provide services throughout the province. Cross appointments exist within the Faculty of Medicine. Candidates must have a doctoral degree and be eligible for membership in the Canadian Speech and Hearing Association. Preference will be given to candidates with clinical and administrative experience and proven research ability. The Director will be expected to undertake some teaching duties. Salary will be dependent on experience and qualifications and will be competitive. This advertisement is directed towards Canadian citizens and permanent residents of Canada. Applications will be received up to January 1983. Please write to: Or. Robert S. Tonks, Oean, Faculty of Health Professions, Dalhousie University, 1322 Robie Street, Halifax, Nova Scotia, B3H 3J5, Canada. Telephone (902) 424-3327.

## BIOCHEMISTRY

**McGILL UNIVERSITY.** Biochemist-

Immunologist. Offer 2 year appointment as assistant professor part-time (non-tenured track) for participation in basement membrane research. Starting salary \$20,000. Write to Mrs. J. Blais, Department of Anatomy, McGill University, 3640 University Street, Montreal, Quebec, or call collect (514) 392-4931. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF OTTAWA.** Biochemistry Department. Research associate for studies on biosynthesis of phytanyl diether lipids in extremely halophilic bacteria and methanogenic bacteria. Ph.D. and at least three years postdoctoral experience. Special interest in candidates with experience in enzymology, particularly solubilization of membrane bound enzymes, and in lipidology. Salary up to \$22,000. Only Canadian citizens and landed immigrants need apply. Send curriculum vitae, publication list and references to Or. M. Kates, Chairman, Department of Biochemistry, University of Ottawa, Ottawa, Ontario, K1N 9B4.

**UNIVERSITY OF ALBERTA.** Department of Biochemistry. Postdoctoral positions. Available immediately to study structure, function and assembly of bacterial and mammalian cell membranes using biochemical, biophysical and molecular biological approaches. Applicants must have a strong background in biochemistry, microbiology or cell biology. Salary commensurate with experience, beginning at \$18,000 for a newly graduated Ph.D. Successful applicants would be eligible for 4-year Alberta Heritage Fellowships starting at \$19,600 per annum. Send curriculum vitae and three letters of reference to Dr. J. Weiser, Oean, Department of Biochemistry, University of Alberta, Edmonton, Alberta, Canada, T6G 2H7.

**McMASTER UNIVERSITY.** Biochemistry. Postdoctoral Research Fellow/Associate. Available immediately for up to 3 years for studies on RNA and animal viruses including membrane glycoprotein transport, replication and expression of cloned and chimeric genes. Salary \$18,000 to \$21,000 per year. Experience in cell culture, recombinant DNA technology desirable. Send resume and names of three references to: Or. H.P. Ghosh, Professor, Department of Biochemistry, McMaster University, Hamilton, Ontario, L8N 3Z5, Canada.

**UNIVERSITY OF BRITISH COLUMBIA.** Biochemistry Department. Research Positions. 1. Supervisor of NMR Facility — Applications are invited for a Research Associate position supervising an interdisciplinary NMR Facility in the Faculty of Medicine. Responsibilities will also include maintenance and development of NMR facilities. The successful applicant will probably hold a Ph.D. in Physics or Chemistry and will have a strong NMR background. Salary \$22,000 p.a. 2. Post-doctoral Research Associate. The successful applicant will have approximately two years post-doctoral experience and will lead a research program aimed at understanding basic physical properties of lipids in membrane systems. Experience with membrane systems, lipid synthesis, 31p and 2H NMR and electron microscopy essential. Salary \$22,000 p.a. 3. Post-doctoral Position — The successful applicant will be engaged in studies directed towards the in vivo targeting of drugs trapped in liposomal systems. Experience with model membrane systems or strong background in organic synthesis required. Salary \$18,000 p.a. Applications including a curriculum vitae and the names of two references should be sent before January 1, 1983 to Dr. P.R. Cullis, Biochemistry Dept., The University of British Columbia, Vancouver, B.C., V6T 1W5, Canada.

## BUSINESS ADMINISTRATION /COMMERCE

**QUEEN'S UNIVERSITY.** Business Administration and Commerce. Applications are being sought for tenure-track and/or visiting faculty positions in Accounting and Marketing. However, qualified candidates in other areas will be considered also. Evidence of strong research potential desirable. Teaching will be at the B.Com., MBA and Ph.D. level. Completed Ph.D. is strongly preferred. Rank and salary are open. Positions are open to both male and female applicants. Send resume to: Prof. Wm. E. Miles, Associate Dean, School of Business, Queen's University, Kingston,

Ontario, K7L 3N6.  
**McGILL UNIVERSITY. Business Administration.** 1. Assistant Professor and Beginning Associate Professor in such functional specialties as Accounting, Finance, Marketing, Information Systems, Policy, Systems & Computers, Management Science, Organizational Behavior and Industrial Relations. 2. Ph.D. and interest in both teaching and in research. A past publication record essential for appointment at the Associate Professor level. 3. Teaching at the B.Com. and MBA levels in Day and Evening programs of the McGill Faculty of Management. 4. Salaries commensurate with those paid in comparable institutions. 5. Reply to Dr. Laurent Picard, Dean, Faculty of Management, McGill University, 1001 Sherbrooke Street West, Montreal, Quebec, H3A 1G5. Effective Date of Appointment — August 1, 1983. Closing date to receive applications — January 30, 1983.

**THE UNIVERSITY OF ALBERTA.** Faculty of Business. Applications are invited for full-time tenure-track faculty positions from those with teaching and research interests in: Accounting (5 positions); Management Information Systems (2 positions); Finance (1 position); Marketing (2 positions); Business Policy (1 position); Organization Behavior (1 position); Industrial Relations (1 position) and Legal Relations (1 position). Ph.D. or equivalent required, or candidate should be at the completion stage of degree. Salary and rank depend on qualifications. Ranges are: Assistant Professor \$27,720 to \$39,820; Associate Professor \$35,420 to \$51,658; Professor from \$46,010. In addition, market supplements to ensure competitive offers are negotiable. Appointments normally effective July 1. Send résumé to: Dr. Roger S. Smith, Dean, Faculty of Business, The University of Alberta, Edmonton, Alberta T6G 2G2, Canada. The University of Alberta is an equal opportunity employer.

**McMASTER UNIVERSITY.** Faculty of Business. Applications are invited in the following areas: (i) Accounting, (ii) Business Policy, (iii) Finance, (iv) Information Systems, (v) Marketing. Rank depends on qualifications and experience, preferably at the Assistant or Associate Professor level. Visiting appointment is also possible. Ph.D. or DBA degree (completed or near completion) is expected, preferably with teaching and research experience. Duties include research and teaching at both graduate and undergraduate levels. Applicants in Marketing will be expected to teach courses in Introductory Marketing, Communications, and/or Product Management. Applicants for Information Systems will be expected to contribute to the major field of the Ph.D. program in Management Science/Systems, others to the minor. Salary will be commensurate with qualifications, teaching and practical experience. Appointment date is open; July 1, 1983 is preferred. Application date closes when position is filled. Applicants should be sent to: Dr. A.Z. Szatrowski, Dean, Faculty of Business, McMaster University, Hamilton, Ontario, L8S 4M4.

**DALHOUSIE UNIVERSITY.** School of Business Administration. Applications are invited at various ranks in Information Systems, Quantitative Methods, and Policy. Qualifications required are a Ph.D. in teaching area or Ph.D. with five years related work experience in the Business Community. Salary and rank will be commensurate with the applicant's qualifications and experience. Enquiries should include a curriculum vitae and the names of three referees and should be sent to Dr. J.H. Scheibelhut, Director, School of Business Administration, Dalhousie University, Halifax, Nova Scotia, B3H 1Z5.

**UNIVERSITY OF WINDSOR.** Faculty of Business Administration. Positions available in (i) Accounting, (ii) Administrative Studies (Industrial Relations, Personnel Administration, and Organizational Behaviour), (iii) Finance, (iv) Finance, (v) Management Science, (vi) Marketing, and (vii) International Business. Lecturer, Assistant, Associate or Professor; rank based on qualifications and experience. Ph.D. or DBA (completed or near completion), preferably with business, teaching and research experience, for accounting, MBA plus Professional designation and relevant experience considered. Research and teaching at both MBA and Bachelor of Commerce levels. Salary will be commensurate with qualifications, teaching and practical experience. Apply to Dr. Ralph K. Cowling, Interim Dean, Faculty of Business Administration, University of

Windsor, Windsor, Ontario, N9B 3P4. Appointment date open: July 1, 1983 preferred. Deadline for applications: when filled.  
**UNIVERSITY OF WATERLOO. Business Administration.** Accounting and Finance — Applications are invited for faculty positions from those with teaching and research experience in (i) managerial accounting, (ii) financial accounting, (iii) finance, (iv) accounting information systems. Ph.D. or equivalent. Salary and rank will depend on qualifications. Appointments effective July 1, 1983 or by arrangement. Appointments available in positions filled. Send résumés to Dr. John R. Hanna, Professor of Accounting, 222 Hagey Hall, University of Waterloo, Waterloo, Ontario, N2L 3G1. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. The availability of these positions is subject to budgetary approval.

**BISHOP'S UNIVERSITY.** Business Administration. Applications are invited for a new position in accounting, rank open, for July 1, 1983. Applicants should hold the Ph.D. degree or the M.B.A./C.A. with relevant work experience. Strong teaching capability is essential together with academic scholarship. Subject to the completion of funding arrangements, this is an endowed position with salary and rank negotiable. Please submit applications with curriculum vitae and the names of three referees to: Dr. K.J. Kueper, Dean of the Faculty, Bishop's University, Lennoxville, Québec, J1M 1Z7. (819) 569-9551.

**BISHOP'S UNIVERSITY.** Business Administration. Applications are invited for a tenure-stream appointment in finance, rank open, for July 1, 1983. Applicants should hold the Ph.D. or the M.B.A. and have relevant work experience. The successful candidate will teach undergraduate courses in finance. The salary scales at Bishop's University are highly competitive. Please submit applications with curriculum vitae and the names of three referees to Dr. K.J. Kueper, Dean of the Faculty, Bishop's University, Lennoxville, Québec, J1M 1Z7. (819) 569-9551.

**WILFRID LAURIER UNIVERSITY.** Business Administration. Applications are invited for teaching positions in the areas of Accounting, Finance, Management Information Systems, Marketing, Operations Management, Organization Behaviour and International Policy for the 1983-84 academic year. Qualifications: Lecturer up to Assistant Professor. Duties: Includes undergraduate and/or graduate teaching. Applications will be accepted until positions are filled and are subject to budget approval. Immigration policy states that only Canadians or landed immigrants to Canada need apply for this position. Send applications to: Dr. T.F. Cawsey, Ph.D., Associate Dean of Business, School of Business & Economics, Wilfrid Laurier University, Waterloo, Ontario, Canada, N2L 3C5.

**UNIVERSITY OF NEW BRUNSWICK.** Business Administration. Tenure-track positions at the Assistant Professor or Associate Professor level are available in Financial Accounting, Personnel and Industrial Relations, Marketing and Business Policy. An opening also exists for a substantial replacement to teach management. Duties include teaching at the undergraduate level and conducting research. A doctorate is preferred. Salaries are competitive. Appointments are effective July 1, 1983. Applications will be considered until positions are filled. Send curriculum vitae and the names of three referees to Dr. I.R. Cameron, Dean of Faculty, University of New Brunswick, Saint John Campus, P.D. Box 5050, Saint John, N.B. E2L 4L5.

**SAINTE VINCENT UNIVERSITY.** Business Administration. Mount Saint Vincent University, Department of Business Administration, invites applications for a full-time faculty position in the area of accounting. The successful candidate will be expected to teach undergraduate accounting and related business courses. Qualifications: Ph.D. in accounting prefer-

red but candidates with a professional accounting designation and MBA and/or work experience is expected. Rank and salary in accordance with qualifications and experience. The position will commence July 1, 1983. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Send curriculum vitae and the names of three referees to: Dr. Susan Clark, Dean, Human and Professional Development, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6.  
**UNIVERSITY OF NEW BRUNSWICK.** Faculty of Administration. Commerce. Applications for tenure-track or term positions are invited in: Accounting, Finance, Business Policy, Management Science, Marketing, Management, Industrial Relations, and Personnel. Rank and salary are open and depend on qualifications and experience. Successful candidates will carry out research and teach in a dynamic undergraduate program and a new part-time masters program. Submit curriculum vitae and names of three referees to: Dr. Eric West, Dean, Faculty of Administration, University of New Brunswick, Bag Service No. 45555, Fredericton, N.B., E3B 6E5.

## CHEMISTRY

**UNIVERSITY OF WINNIPEG.** Chemistry Department. The Chemistry Department invites applications for a tenure-track position at the rank of Assistant Professor. Ph.D. ordinarily required. Duties will include teaching Inorganic and Physical Chemistry. One course will be at the Introductory (First Year) level. Some senior laboratory instruction will also be required. Salary dependent on qualifications and experience. Application should include a curriculum vitae, a statement of research interests and the names of three referees should be sent to: Dr. F.W. Barth, Science Committee Chairman, Chemistry Department, 515 Portage Avenue, Winnipeg, Manitoba, R3B 2E9. Deadline for applications: September 1 (possibly August 15, 1983). Closing date for applications: May 1, 1983. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF SASKATCHEWAN.** Department of Chemistry and Chemical Engineering. Applications are invited from qualified candidates for appointments as Post-doctoral Fellows and Research Associates in the following fields of chemistry and chemical engineering — Chemistry — Theory of conformational changes and chemical reactions, energy hypersurfaces, quantum chemistry of biomolecules, physical chemistry and radiation chemistry of transition metal complexes and high pressure chemistry, laser photochemistry, photophysics and spectroscopy, fluorescence studies of proteins, thermodynamic and dynamic investigations of microemulsions, organometallic chemistry, organosilicon chemistry, electron spin resonance of solid state defects and organic radicals, spin-Hamiltonian theory, chemical reactions generated by ultrasound, dynamics of fast reactions using ultrasonic techniques. Chemical Engineering — corrosion engineering, slurry pipeline flow, heterogeneous catalysis, production of liquid and gaseous hydrocarbons from coal and biomass, and reactor modelling studies. The positions are tenable initially for one year, renewable, at rates up to the maximum allowed by the NSERC grant regulations. Send curriculum vitae, transcripts and letters from three referees to the undersigned, from whom further particulars may be obtained. Professor D.R. Grant, Head, Department of Chemistry and Chemical Engineering, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0, Canada. Telephone 306-343-2933.

**UNIVERSITY OF ALBERTA.** Chemistry. The Department of Chemistry at the University of Alberta invites applications for the position of Assistant Professor (salary range \$27,720 to \$35,820) in the area of organic chemistry (subject to final budget approval). Candidates must have a Ph.D. in Organic Chemistry and post-doctoral experience is desirable. Appointments start July 1, 1983. Preference will be given to candidates whose research interests do not overlap with current members of the division. The University of Alberta is an equal opportunity employer, but in accordance with Canadian Immigration regulations, this advertisement is directed to Canadian citizens and perma-

nent residents in Canada. A curriculum vitae, the names of at least three referees, a summary of research interests, and a detailed research proposal should be sent to Professor R.J. Crawford, Chairman, Department of Chemistry, University of Alberta, Edmonton, Alberta, Canada, T6G 2G2. Closing date: January 1, 1983.

## CLASSICS

**UNIVERSITY OF VICTORIA.** Classics. The Department of Classics invites applications for a possible vacancy at the rank of visiting lecturer for the period September 1, 1983-April 30, 1984. Candidates should be prepared to teach undergraduate courses in Greek, Latin and Classical Studies. The position is contingent upon the availability of adequate funding. Applicants should send a curriculum vitae to Dr. J.P. Olson, Chairman, Department of Classics, University of Victoria, Victoria, B.C., Canada, V8W 2Y2, by February 28, 1983 and should ask three referees to write to the Chairman on their behalf. Canadian Immigration regulations now require that applicants to assess applications from Canadian citizens and permanent residents of Canada before assessing applications from other persons.

## COMMUNICATION STUDIES

**UNIVERSITY OF WINDSOR.** Communication Studies. Applications are invited for a full-time tenure-track appointment in the area of media production, with emphasis on cinematography, radio-television and photography. The candidate should possess the Ph.D. or at least the M.A., and significant experience. Rank and salary will be commensurate, and appointment will be made for July 1, 1983. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Applicants should submit applications with a complete curriculum vitae to Dr. Stuart A. Selby, Department of Communication Studies, University of Windsor, Windsor, Ontario, N9B 3P4.

## COMPUTER SCIENCE

**UNIVERSITY OF TORONTO.** Department of Computer Science. Applications are invited for a senior position in Computer Graphics; the rank and salary to be determined by the successful applicant's past experience and qualifications, subject to budgetary approval. We will consider applicants with proved research abilities in Computer Graphics, in particular, in the area of realistic image synthesis, motion understanding and modelling, display systems architectures and interaction techniques. A demonstrated ability to help organize and lead a sizeable Computer Graphics Research Lab is essential. Our Graphics Lab currently involves two faculty members, over a dozen graduate students (M.Sc., Ph.D.), programmers, and hardware maintenance support. Our equipment includes a PDP 11/45, a VAX 11/780, an Ikonas frame buffer and a bit-slice processor, a high performance refresh vector drawing CRT, a frame digitizer, a colour camera including a 16mm animation camera, and a vast array of off-the-shelf or home grown input and output devices. Duties will consist of teaching at the undergraduate and graduate levels, graduate student supervision, and collaborative research. Apply in writing to Professor Allan B. Borodin, Chairman, Department of Computer Science, University of Toronto, Toronto, Ontario, Canada, M5S 1A7, together with curriculum vitae, transcripts and three letters of reference. Appointment to commence July to September 1983, as preferred by candidate. Deadline for application is December 31, 1982. Note: In accordance with Canadian Immigration regulations, priority will be given to Canadian citizens and permanent residents of Canada.

**UNIVERSITY OF TORONTO.** Department of Computer Science. Applications are invited for a senior faculty position in numerical analysis/scientific computing; the rank and salary will be determined by the successful applicant's past experience and qualifica-

tions, subject to budgetary approval. We will consider candidates with a proven research record in numerical analysis/scientific computing, and a strong interest in numerical software. The successful candidate will be expected to play a leading role in the development of a scientific computing group that has been formed within the Department of Computer Science. The group currently consists of 4 faculty members in numerical analysis, 1 faculty member in symbolic mathematics, several graduate students, and other faculty members with related interests. Duties will consist of teaching at the undergraduate and graduate levels, graduate student supervision, and research. Apply in writing to Professor Allan B. Borodin, Chairman, Department of Computer Science, University of Toronto, Toronto, Ontario, Canada, M5S 1A7, together with curriculum vitae, transcripts, and three letters of reference. Appointment to commence July 1983, or September 1983 if preferred by candidate. Deadline for application is December 31, 1982. Note: In accordance with Canadian Immigration regulations, priority will be given to Canadian citizens and permanent residents of Canada.

**UNIVERSITY OF TORONTO.** Department of Computer Science. Applications are invited for Assistant Professorships at all three campuses, commencing July or September 1983 (both tenure stream and contractually limited 1-3 year appointments are available), subject to budgetary approval. Salary commensurate with qualifications and experience. Applicants should hold a Ph.D. in computer science; all areas will be considered, although we will give priority to the area of artificial intelligence, in particular, we seek an individual with research interests in one of the following sub-areas: knowledge representation, expert systems, natural language understanding, vision. Duties include teaching at the undergraduate and graduate levels, graduate student supervision, and collaborative research. Apply in writing to Professor Allan B. Borodin, Chairman, Department of Computer Science, University of Toronto, Toronto, Ontario, Canada, M5S 1A7, together with curriculum vitae, transcripts and three letters of reference. Appointment to commence July 1983, or September 1983, as preferred by candidate. Deadline for application is December 31, 1982. Note: In accordance with Canadian Immigration regulations, priority will be given to Canadian citizens and permanent residents of Canada.

**UNIVERSITY OF TORONTO.** Department of Computer Science. Applications are being invited from qualified candidates for one or two year Postdoctoral positions commencing July-September, 1983, in all areas of Computer Science. Stipend to \$19,500 per annum, depending on qualifications (subject to review in 1983). Candidates should hold a Ph.D. degree in Computer Science. Send curriculum vitae, transcripts and three letters of reference no later than December 31, 1982 to: Professor A.B. Borodin, Chairman, Department of Computer Science, University of Toronto, Toronto, Ontario, M5S 1A7, Canada. Note: In accordance with Canadian Immigration regulations, priority will be given to Canadian citizens and permanent residents of Canada.

**SIMON FRASER UNIVERSITY.** Computer Science Department. Applications are invited for 2 tenure-track positions in the most rapidly growing Computing Science Department in Canada. Candidates from all areas of specialization in Computing will be considered but the Department has a special interest in Graphics, Software Engineering, Computer Design and Organization, Artificial Intelligence and Information Systems. A Ph.D. in Computing Science (or equivalent) is required and candidates should have demonstrated research and teaching experience. Candidates with prior experience should have a record of research and publications, graduate student supervision and teaching. Responsibilities will include teaching at the undergraduate and graduate levels, research and the usual administrative activities. Simon Fraser University is situated on the top of Burnaby Mountain and serves 12,000 students. Lying just east of Vancouver, the site commands magnificent views of Burrard Inlet, the mountains, the Fraser River and Vancouver Harbour. This Lower Mainland area of British Columbia is unique in Canada for its mild climate and varied recreational facilities. The Computing Science Department offers B.Sc. and V.A. degrees in Computing Science, B.Sc. Honours degree in Digital Systems Design,

and an M.Sc. and Ph.D. degree in Computing Science. The Department has an interactive graphics laboratory including an Evans and Sutherland picture system, a VAX 11/750, and also well-equipped microprocessors, minicomputer and hardware laboratories. The University operates an outstanding central computing facility supporting both MTS and OS/VOLBUR operating systems. There is also a raster-scan graphics facility available for faculty research. Applications from candidates not presently eligible for employment in Canada will be acknowledged; employment considerations for such candidates will be deferred until a Canadian search is complete. Positions are subject to budgetary constraints. Applications will be accepted until positions are filled. To apply, send curriculum vitae and the names of three referees to: Nick Cercone, Chairman, Computing Science Department, Simon Fraser University, Burnaby, British Columbia, Canada, V5A 1S6. Telephone: (604) 291-4277.

**YORK UNIVERSITY.** Department of Computer Science. Applications are invited for several academic tenure-track and visiting (scholarship replacement) positions at the assistant, associate and full professor level. Applicants should have obtained a Ph.D. in Computer Science or equivalent, or will complete such a degree before the 1983-84 academic year. Preference will be given to applicants who have research and teaching interests in one or more of the following areas: data base management systems, artificial intelligence, programming languages, software engineering, computer graphics or minis and micros. Duties will include teaching, research and participating in the life of the department. Salary is negotiable. Faculty have access to a National Advanced Systems AS/6, an IBM 4341, a DEC system-10, a VAX 11/780 and a microcomputer laboratory which includes interactive graphic subsystems. York University is located in the northwest quadrant of Metropolitan Toronto, an area with one of the highest concentrations of computers in Canada. York is also within easy reach of excellent cultural and recreational facilities. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. To apply, send your curriculum vitae and three references to: Professor R.M. Wharton, Chairman, Appointments Committee, Department of Computer Science, York University, 4700 Keele Street, Downsview, Ontario, Canada, M3J 1P3.

**THE UNIVERSITY OF LETHBRIDGE.** Department of Mathematical Sciences. Computing Science. One position with rank and salary commensurate with qualifications and experience and subject to availability of funding. In accordance with Canadian Immigration regulations, this advertisement is directed to Canadian citizens and permanent residents of Canada. Ph.D. at or near completion. Applicant must have a commitment to teaching at the undergraduate level and to research, and will be expected to play a major role in the development of the computing science programme. Min. salaries: Assistant Professor — \$27,230; Associate Professor — \$34,867; Full Professor — \$45,226 (1982-83). Applications including a curriculum vitae, transcripts, and three letters of reference should be sent to: The Chairman, Department of Mathematical Sciences, The University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M4. Tenure-track position. Probationary appointment beginning 1 July 1983. Closing date: December 31, 1982.

**QUEEN'S UNIVERSITY.** Computing and Information Science. Applications are invited for a senior faculty position. The appointee should have an established research reputation and a wide appreciation of various aspects of computing science and computer engineering. Candidates of both sexes are encouraged to apply. Canadian citizens and landed immigrants will be given preference. Applicants should send a curriculum vitae and the names of three referees by February 15, 1983 to: Glenn H. Selwyn, Head, Computing and Information Science, Queen's University, Kingston, Ontario, Canada, K7L 3N6. Telephone: 613-547-2915.

**DALHOUSIE UNIVERSITY.** Computing Science. Dalhousie University, Department of Mathematics, Statistics and Computing Science, invites applications for tenure-track positions in Computing Science. Applicants should hold a Ph.D. in any area of computing science. Applications, including curriculum vitae and the names of three referees should be sent to: Dr. A.C. Thomp-

son, Department of Mathematics, Statistics and Computing Science, Dalhousie University, Halifax, Nova Scotia, B3H 4H8.

**McGILL UNIVERSITY.** Computer Science. The School of Computer Science invites applications for several openings at the Assistant Professor level. The starting date is negotiable. A Ph.D. or equivalent is required. All specializations of computer science are of interest but preference will be given to candidates with established records in artificial intelligence, database systems, VLSI, computer networks, multiprocessing or programming languages. Responsibilities include research and teaching at the graduate and undergraduate level. Salary negotiable. Minimum starting salary \$26,150. Candidates should write to Prof. M.M. Newborn, Director, School of Computer Science, Burnside Hall, 805 Sherbrooke Street West, McGill University, Montreal, Quebec, H3A 2K6, Canada.

**UNIVERSITY OF SASKATCHEWAN.** Department of Computational Science. Applications are invited for two tenure-track faculty positions at the Assistant Professor level (commencing July 1, 1983). Applicants should have a Ph.D. in Computer Science or Computer Engineering (or should be nearing completion of this degree). Candidates from all areas of Computer Science or Computer Engineering are encouraged to apply. Responsibilities will include teaching at the undergraduate and graduate levels and research. Salary will be in the range of \$28,000 to \$38,000 depending on qualifications and experience. The University of Saskatchewan provides an extremely attractive campus that overlooks the south Saskatchewan River in Saskatoon. A young, vigorous and expanding Department of twelve provides B.Sc., B.Comm., and M.Sc. degree programs in Computer Science. A Ph.D. degree is offered on a specific case basis. The Department has available some excellent research facilities featuring a VAX 11/750 Running Unix in addition to very good undergraduate facilities that are administered by academic computing services. For direct enquiries, and applications to: Dr. P.G. Sommer, Department of Computational Science, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0, Canada (306) 343-3783.

**ACADIA UNIVERSITY.** School of Computer Science. A number of tenure-track positions are available (subject to budgetary approval) in the following areas: hardware, real time systems, and focal networks. A Ph.D. in Computer Science or a closely related discipline is preferred, but candidates with an M.Sc. will be considered. Duties include undergraduate and M.Sc. level teaching and supervision. Salaries according to qualifications and experience. Applications, including the names, addresses of at least two referees, should be sent to Dr. T. Pietrzykowski, Director, School of Computer Science, Acadia University, Wolfville, Nova Scotia, B0P 1X0, in accordance with Canadian Immigration requirements. This advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF WATERLOO.** Computer Science. The University of Waterloo, Department of Computer Science invites applications for a faculty position in the area of Information Systems. The candidate is expected to hold a Ph.D. degree in Computer Science, Information Systems, Management Systems, or related fields, or equivalent experience. An M.B.A. degree would be desirable though not necessary. Salary and rank according to experience. The successful candidate will be expected to participate in the teaching of the curriculum in Information Systems and related areas. The Computer Science department is located in the Faculty of Mathematics which has large programs for students specializing in Computer Science, Mathematics, Accounting, and Business Administration. There are excellent opportunities for interaction with professors of Computer Science, Statistics, and Operational Research in the Faculty of Mathematics. Management Science in the Faculty of Engineering and Architecture in the Department of Economics. For further information contact Professor J.A. Brzozowski, Chairman, Department of Computer Science, University of Waterloo, Waterloo, Ontario, N2L 3G1. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF WATERLOO.** Computer Science. The University of Waterloo invites applications for faculty positions at the

Assistant, Associate, or Full Professor level. A Ph.D. in Computer Science is required, with evidence of outstanding research accomplishment or potential. All areas will be considered. Salary according to experience. This position is subject to availability of funds. Applications should include a curriculum vitae and the names of three references and should be directed to Professor J.A. Brzozowski, Chairman, Department of Computer Science, University of Waterloo, Waterloo, Ontario, Canada, N2L 3G1. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

## CONSUMER STUDIES

**UNIVERSITY OF GUELPH.** Department of Consumer Studies. Textile/Clothing Emphasis. Tenure stream assistant or associate professor position available. Doctorate in hand or in process required. Undergraduate and graduate level teaching in an interdisciplinary department with research interests in such aspects of the textile/clothing industry as consumer needs and behavior, manufacturing and retailing. Please write to Dr. M.S. Sommers, Chairman, Department of Consumer Studies, University of Guelph, Guelph, Ontario, N1G 2W1. Position subject to final budgetary approval. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF GUELPH.** Department of Consumer Studies. Consumer Behavior Emphasis. Tenure stream assistant or associate professor position available. Doctorate in hand or in process required. Undergraduate and graduate level teaching in an interdisciplinary department with research interests in consumption and consumer behavior patterns and/or the application of research methods to aspects of consumption behavior. Please write to Dr. M.S. Sommers, Chairman, Department of Consumer Studies, University of Guelph, Guelph, Ontario, N1G 2W1. Position subject to final budgetary approval. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF GUELPH.** Department of Consumer Studies. Foods Emphasis. Tenure stream assistant or associate professor position available. Doctorate in hand or in process required or appropriate research and publication record. Undergraduate and graduate level teaching in an interdisciplinary department with research interests in sensory evaluation, product development and/or related food industry areas. Please write Dr. M.S. Sommers, Chairman, Department of Consumer Studies, University of Guelph, Guelph, Ontario, N1G 2W1. Position subject to final budgetary approval. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

## CRIMINOLOGY

**SIMON FRASER UNIVERSITY.** Department of Criminology. 1. The Department of Criminology, Simon Fraser University, has been authorized to invite applications in relation to: (a) tenure-track position at the Assistant Professor level commencing at the academic year 1983/84. 2. Ph.D. with experience and publications in criminology/sociology. Preference will be given to candidates who have a demonstrated interest and expertise in the areas of white collar crime, corporate crime, organized crime, and environmental crime. In accordance with Canadian Immigration Requirements, this advertisement is directed to Canadian citizens and permanent residents. 3. To undertake research and to conduct courses in the area of general criminology. 4. Salary dependent on qualifications and experience. The salaries and fringe benefits at Simon Fraser University are highly competitive. 5. Applications, including curriculum vitae and the names and addresses of at least three referees, to be sent to: Dr. Duncan Chappell, Chairman, Department of Criminology, Simon Fraser University, Burnaby, B.C. V5A 1S6. 6. The successful candidate may commence his/her duties on 1 September 1983.

7. Applications will be accepted until 31 December 1982.

## CROP SCIENCE

**UNIVERSITY OF SASKATCHEWAN.** Crop Science Department. Professional Research Associate in Seed Physiology. Qualifications: Ph.D. with strong background in plant physiology and biochemistry, post-doctoral research experience in the biochemistry of seed viability, germination and herbicide action in wild oats. Preference will be given to candidates who are Canadian citizens or hold landed immigrants status. Terms of Employment: Three years (from April 1, 1983). Salary: 21,000 to 28,000 per year, depending on qualifications. Apply by January 31, 1983 to: Dr. G.M. Simpson, Crop Science Department, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

**UNIVERSITY OF GUELPH.** Department of Crop Science. Assistant/Associate Professor. Field Crops Extension. Full-time probationary position (tenure-track). Responsibilities include co-ordination of and participation in the extension activities within the Crop Science Department as well as liaison with the extension programs of the Ontario Ministry of Agriculture and Food. Position also involves teaching and/or production research. The successful applicant will assume responsibility for an established extension program. Applicants should possess a Ph.D. in some area of Crop Science. Salary and rank commensurate with training and experience. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Closing date December 31st, 1982. Send résumé, transcripts and names and addresses of three referees to: Dr. B.E. Christie, Department of Crop Science, University of Guelph, Guelph, Ontario, N1G 2W1. Position subject to final budgetary approval.

## DENTISTRY

**UNIVERSITY OF SASKATCHEWAN.** College of Dentistry. Effective immediately, a vacancy exists for a full-time faculty member in the Department of Community and Pediatric Dentistry, College of Dentistry, University of Saskatchewan. Qualifications: Graduate experience in treating patients requiring special care (e.g. physically or mentally handicapped individuals, and geriatric patients). Duties include undergraduate teaching in the areas of special care patients, responsibility for development and co-ordinating a final year program and senior students. Consulting and practice privileges to a maximum of two half days per week are permitted, either on or off base. An Intramural Practice Unit is provided for faculty who wish to utilize on base facilities. Salary and rank commensurate with qualifications and experience. Interested applicants should send curriculum vitae and related documentation with at least three names for reference purposes to: Dr. E.R. Ambrose, Dean, College of Dentistry, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0, Canada. Appointments will be made in accordance with Canadian Immigration requirements.

## ECONOMICS

**YORK UNIVERSITY.** Economics. York University, Department of Economics, Faculty of Arts, announces openings for tenure track positions and seasonal appointments subject to authorization and budget approval. Rank and salary are commensurate with qualifications and experience. At the Assistant Professor level candidates are expected to have a Ph.D. degree (or expected in 1983) and at the Associate Professor level candidates are required to have demonstrated achievement as established scholars and good teachers. Duties include teaching (at undergraduate and graduate levels) and research. Fields of specialization open. Employment and Immigration Canada requires that only persons legally entitled to work in Canada be considered for this position. Applications

with C.V. and names of three referees should be sent to Professor G.H. McKechnie, Chairman, Department of Economics, Room S845 Ross Building, York University, 4700 Keele Street, Downsview, Ontario, M3J 1P3. Closing date for applications December 31, 1982.

**MCMASTER UNIVERSITY.** Economics. The Department of Economics at McMaster has one or more junior level positions commencing July 1, 1983 (subject to budget approval). All candidates are expected to have completed a Ph.D. degree by the end of 1983. All fields will be considered but preference will be given to candidates who are expected to establish themselves as good teachers and recognized scholars. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Closing date for applications is January 15, 1983. Salary is commensurate with qualifications and experience. Applications, including curriculum vitae and names of references should be sent to: Dr. J.A. Johnson, Chairman, Department of Economics, McMaster University, Hamilton, Ontario, L8S 4M4.

**UNIVERSITY OF WINNIPEG.** Department of Economics. The Department of Economics, University of Winnipeg, invites applications for two full-time, tenure-track positions. The appointments are effective on or after July 1, 1983. Applicants for these positions should have a Ph.D. (completed or near completion). Successful candidates will have a strong commitment to undergraduate teaching and research. Rank is commensurate with candidate's qualifications. Appointments at the senior rank of Associate or Full Professor may be made for candidates demonstrating an established reputation of excellence in both research and teaching. Tenure may be granted to senior appointees after one year. Salary is competitive at all ranks with other Canadian universities. At this time, fields of particular interest are economic theory, international economics and mathematical economics but strong candidates in other areas will be given serious consideration. Applicants should send curriculum vitae and names of at least three referees to: Professor D.J. Snidal, Chairman, Department of Economics, University of Winnipeg, 515 Portage Ave., Winnipeg, Manitoba, Canada, R3B 2E9. Applications will be accepted until the positions are filled. In accordance with Canadian Immigration requirements, Canadian citizens and permanent residents will be given first consideration, "or equivalent qualification."

**UNIVERSITY OF GUELPH.** Department of Economics. Contractually limited and visiting appointments for 1983-84. Fields of particular interest are corporate economics, economic history, statistics, economic development and theory, although other fields will be considered. For visiting appointments at the senior level a solid research and publication record is required. Appointments effective July 1 or September 1, 1983. Positions are subject to final budgetary approval. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Interested applicants should contact: Professor D.A.L. Auld, Chairman, Department of Economics, University of Guelph, Guelph, Ontario, N1G 2W1.

**UNIVERSITY OF VICTORIA.** Economics. Applications are invited to fill two regular full-time Assistant Professor positions effective July 1, 1983. Candidates should hold a Ph.D. in Economics. (1) Economic History. Teaching assignments will include Canadian Economic History. (2) Econometrics and Mathematical Economics. Canadian Immigration regulations now require the University to assess applications from Canadian citizens and permanent residents of Canada before assessing applications from persons outside Canada. Please send applications to: Dr. K.L. Avio, Acting Chairman, Department of Economics, University of Victoria, P.O. Box 1700, Victoria, B.C. V8W 2Y2. Closing date for applications is January 15, 1983.

**UNIVERSITY OF SASKATCHEWAN.** Department of Economics. Applications are invited for a teaching position in the Department of Economics. Rank is open, including senior position. Ph.D. is required. Salary is competitive. Duties include the teaching of graduate and undergraduate courses, and research. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Applications will be accepted until position is filled. Enquiries should be directed to: Dr. J. Vorstermans,

Chairman, Department of Economics, Saint Mary's University, Halifax, Nova Scotia, B3H 3Y9.

**WILFRID LAURIER UNIVERSITY.** Department of Economics. Rank and salary open, and commensurate with qualifications. Ph.D. or near Ph.D. preferably with some teaching experience and publications. Duties include research interest and teaching at the undergraduate level. Fields open. Positions offered subject to budget approval. Immigration policy states that "Only Canadians or permanent residents need apply for this position". Applications with curriculum vitae and names of three referees should be sent to: Dr. John Finlay, Chairman, Department of Economics, Wilfrid Laurier University, Waterloo, Ontario, N2L 3C5.

**THE UNIVERSITY OF ALBERTA.** Economics. The University of Alberta, Department of Economics, has three open positions for a tenure track appointment, commencing July 1, 1983. Rank is Assistant Professor. 1982 annual salary floor is \$27,720 with 1983 starting salary adjusted to reflect the new salary scale. Ph.D. and relevant teaching and research experience are both required. All positions are open to the best candidates, but a strong background in micro-economic theory and its applications, and/or econometrics, are preferred for two of the positions. The University of Alberta is an equal opportunity employer, but, in accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Send applications (including complete curriculum vitae and the names of three referees) to: Dr. Brian L. Scarfe, Chairman, Department of Economics, University of Alberta, Edmonton, Alberta, T6G 2H6, preferably by December 31st, 1982. Later applications will be accepted until the positions are filled.

**DALHOUSIE UNIVERSITY.** Economics. The Economics Department, Dalhousie University, invites applications for two full-time tenure track positions at the Assistant Professor or possibly at the Associate Professor rank commencing July, 1983. Salary depends on qualifications and experience. For at least one of these positions we are primarily interested in someone with a strong background in theoretical and applied econometrics. The field requirements of the other position are open. For both positions, Ph.D., or Ph.D. near completion, are required for appointment at the Assistant rank and a substantial research output for appointment at the Associate rank. In accordance with Immigration requirements, this advertisement is directed in the first instance to Canadian citizens and landed immigrants. Candidates with a strong commitment to excellence in teaching and research should write, enclosing a curriculum vitae and names and addresses of three referees, before January 15, 1983 to Robert L. Coe, Chairman, Economics Department, Dalhousie University, Halifax, Nova Scotia, B3H 3J5.

**THE UNIVERSITY OF WESTERN ONTARIO.** Department of Economics. Instructor. Work in Ph.D. desirable, but M.A. considered. Excellence in teaching is required. These are limited term positions and appointments may be made for periods of not less than one and not more than two years. Any candidate who is actively working towards the Ph.D.\* is eligible for appointment at the rank of Assistant Professor. The limited term nature of the position will not be changed by appointment at a rank other than Instructor. Duties include teaching and/or supervising undergraduate courses in economics including Principles of Economics. Salary floor \$13,750. Contact Professor David Laidler, Chairman, Department of Economics, The University of Western Ontario, London, Ontario, Canada, N6A 3Z4. Appointments effective September 1, 1983. Positions subject to budgetary approval. Closing date for receipt of applications is February 15, 1983. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. An equal opportunity employer. \*or equivalent qualification.

**UNIVERSITY OF WATERLOO.** Department of Economics. 1. One or more appointments in ranks commensurate with candidate's qualifications. 2. Ph.D. with competence in both scholarship and graduate (M.A. and undergraduate) teaching. 3. Applicants with main or secondary specialization in one or more of the following areas are invited to apply: Resource Economics, International Economics, Labor Economics, Monetary

Theory and Institutions. 4. Salaries fully competitive with other Canadian universities. The availability of this position is subject to budgetary approval. 5. Applications including curriculum vitae and references should be sent to: Dr. K.M. Bennett, Department of Economics, University of Waterloo, Waterloo, Ontario, N2L 3G1. 6. Effective date of appointment, July 1, 1983. 7. Closing date for receipt of applications, January 31, 1983. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF WINDSOR.** Department of Economics. Applicants are invited for a full-time tenure-track appointment. Qualifications required are a Ph.D. in Economics, demonstrated teaching capability, and a very strong research orientation. All areas of Economics will be considered, and rank and salary will be commensurate with qualifications and experience. Send curriculum vitae, list of publications, a brief description of research and teaching interests, and the names of three referees to: Professor J.F. Callaghan, Acting Head, Department of Economics, University of Windsor, Windsor, Ontario, N9B 3P4. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**CONCORDIA UNIVERSITY.** Economics. Applications are invited for appointments in ranks commensurate with qualifications: candidates with a completed Ph.D. (or near completion) will be considered for the assistant level. Well-qualified candidates who have established themselves by their excellent teaching and publication records will be considered for a senior appointment. Subject to budgetary approval, the department expects to make two or three appointments for tenure track, limited term, and/or visiting positions. The department is particularly interested in attracting candidates in econometrics, labour economics, macro and monetary economics. Strong candidates in other fields will be seriously considered. Responsibilities include teaching at both undergraduate and graduate levels and supervision of doctoral theses. Canadian Immigration regulations require that only Canadian citizens or landed immigrants to Canada need apply for this position. The closing date is January 1, 1983. Contact Dr. B.S. Sahni, Chairman, Department of Economics, Concordia University, 1455 de Maisonneuve Blvd. W., Montreal, Quebec, H3G 1M8.

**BROCK UNIVERSITY.** Department of Economics. Applications are invited for one, possibly two, positions to teach undergraduate theory and one other area of specialization, preferably international trade, statistics, or econometrics beginning July 1, 1983. All fields will be considered. Rank is open. Preference will be given to applicants with a commitment to research as well as teaching. Salaries are competitive at all ranks. Applications, including curriculum vitae and names of referees, should be sent to: Chairman, Recruitment Committee, Department of Economics, Brock University, St. Catharines, Ontario, L2S 3A1. Applications should be received by January 31, 1983. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**TRENT UNIVERSITY.** Economics. The Department of Economics, Trent University, invites applications for one or more tenure-track appointments beginning 1 July 1983. Responsibilities include research and undergraduate teaching in Theory, Quantitative methods and one or more of the following fields: Natural Resource Economics, Labour Economics, Economic History and History of Economic Thought. Applicants for these positions should have at least a doctorate or be near completion. Salary and rank are negotiable in accordance with qualifications and experience. Appointments are subject to budgetary approval. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Applicants should submit their curriculum vitae along with names of three referees to: Dr. D.C.A. Curtis, Chairman, Department of Economics, Trent University, Peterborough, Ontario, K9J 7B8.

## EDUCATION

**MC GILL UNIVERSITY.** Faculty of Education. 1. Professor — Reading Education (needed

3 or 4 for summer clinical work). 2. Applicant should have earned doctorate in Reading, Educational Psychology, Special Education, English Education or other appropriate area. Must have had college/university level teaching experience in area and supervision of clinical experience. 3. Rank and salary dependent on qualifications and experience. 4. Needed for Summer 1983 session. In accordance with Canadian Immigration regulations, this advertisement is directed to Canadian citizens and permanent residents. 5. Contact Dr. Frank Greene, Director, McGill University Reading Centre, Faculty of Education, 3700 McTavish, Montreal, Quebec, H3A 1Y2, (514) 392-8868.

**MCGILL UNIVERSITY.** Education. The Faculty of Education, McGill University, is considering plans for its third one-month summer school combining a program for gifted children and teacher training. In order to proceed with planning while decisions are being made, applications are being sought for a Director of the summer school, expert in gifted education, experienced in staff selection and in general school and summer school administration for gifted children and teachers, and experienced in the teaching of university-level courses in the education and psychology of the gifted. Also sought are about ten visiting lecturers who would combine demonstration teaching with classroom responsibilities and the supervision of student teaching. These appointees must be educators experienced in specific curricular models in teaching the gifted, supervising abilities, and in teaching gifted children in recognized programs. To ensure the quality of the summer program, we reserve the option of limiting these appointments to personnel whose work may be observed by us or an assessor selected by the summer school. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Send résumé to Prof. Bruce M. Shore, McGill University, Education, 3700 McTavish Street, Montreal, Quebec, H3A 1Y2.

**UNIVERSITÉ DE L'ALBERTA.** Faculté Saint-Jean. Éducation. La Faculté Saint-Jean sollicite des candidatures pour le poste de professeur adjoint pour le programme de baccalauréat en éducation (élémentaire). 2. Exigences: Doctorat en éducation. Expérience dans l'enseignement élémentaire et supérieur. Spécialisation préférée: Français à l'élémentaire. 3. Responsabilités: Enseignement au 1er cycle et encadrement de stagiaires. La préférence sera accordée aux candidats qui pourraient également assurer un enseignement au 2e cycle. 3. Traitement et niveau en fonction des titres et de l'expérience. Salaire minimum de \$30,000. 5. Envoyer le curriculum vitae et noms de trois référents à: G. Morcos, doyen, Faculté Saint-Jean, Université de l'Alberta, 8406-91 Street, Edmonton, Alberta, T6C 4G9. Date limite de réception des demandes: 28 février 1983. 6. Date d'entrée en fonction: 1er juillet 1983. L'Université de l'Alberta a une politique d'égalité en matière d'emploi. Conformément aux exigences relatives à l'immigration au Canada, ce poste est offert aux citoyens canadiens et aux résidents permanents. (Poste soumis aux autorisations budgétaires).

**UNIVERSITY OF SASKATCHEWAN.** Educational Administration. The Department of Educational Administration, College of Education, University of Saskatchewan, may be making an appointment (tenure-track) beginning July 1, 1983, or as mutually agreed upon, at the Assistant Professor level. Applications are invited from individuals who have a doctorate in Educational Administration, a strong research background, and experience in program development. The successful candidate will teach undergraduate and graduate classes, supervise undergraduate interns, supervise graduate students in thesis/project work, be involved in personal and departmental research projects, and undertake regular publication. The availability of the position and the appointment are subject to budgetary and related considerations. Salary will be commensurate with experience and qualifications. The 1982-83 salary range at the Assistant Professor level is \$26,907-\$35,007. Candidates should send their letter of application, curriculum vitae, names of three referees, and, if recent graduates, a transcript of marks, to Dr. Joe Pyra, Head, Department of Educational Administration, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. Deadline for receipt of applications is January 31, 1983. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

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**BRANDON UNIVERSITY.** Education. The Faculty of Education, Brandon University, announces the following: Position: Full-time in the Department of Educational Foundations. Qualifications: Doctorate, with successful teaching experience in the public schools and major work in two or more of the following areas: Adult Education, History, Sociology and Philosophy of Education. Responsibilities: 1. To teach undergraduate courses in the areas of aforementioned specialties; 2. Contribute where qualified to other areas of need in the Faculty of Education. Salary: Commensurate with experience and qualifications. Application Deadline: Until position is filled. Letters of Application: Send letter of application, curriculum vitae and three letters of recommendation to: Dr. Dale T. Hayes, Faculty of Education, Brandon University, Brandon, Manitoba, R7A 6A9. Note: In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. This position will be filled contingent upon the availability of funds.

**SIMON FRASER UNIVERSITY.** Faculty of Education. Associate Professor (tenure-track). Curriculum Theory and Development. Requirements include Ph.D., university teaching experience, broad range of research interests. To teach undergraduate and graduate courses, supervise graduate students and contribute to research in the area of curriculum. The appointment will be effective September 1, 1983, contingent upon funding. Preference will be given to candidates eligible for employment in Canada at the time of application. Send full curriculum vitae and the names of three referees to Dr. Jaap Tuinman, Acting Dean of Education, Simon Fraser University, Burnaby, B.C. V5A 1S6. Applications will be accepted until December 31, 1982.

**SIMON FRASER UNIVERSITY.** Faculty of Education. Associate Professor (tenure-track) of Instructional Psychology. Requirements include Ph.D., university teaching experience, broad range of research interests. To teach undergraduate and graduate courses, supervise graduate students and contribute to research in the area of Instructional Psychology. The appointment will be effective September 1, 1983, contingent upon funding. Preference will be given to candidates eligible for employment in Canada at the time of application. Send full curriculum vitae and the names of three referees to Dr. Jaap Tuinman, Acting Dean of Education, Simon Fraser University, Burnaby, B.C. V5A 1S6. Applications will be accepted until December 31, 1982.

**UNIVERSITY OF VICTORIA.** Faculty of Education. The Faculty of Education will require Sessional Instructors during the 1983 Summer Studies session (May-August, May-June and July-August). Applications are invited for any of the following areas: Graduate Curriculum Development in the areas of Mathematics, Science, Social Studies; Physical Education; Educational Psychology; Counselling; Play Theory; Education Administration; Reading and Language Arts; Curriculum Studies; Music Education; and Art Education. Undergraduate Physical Education; Outdoor Recreation; Music Education; Art Education; Mathematics Education; Science Education; Social Studies; Reading; History of Education; Educational Psychology; Exceptional Children; Learning Disabilities; Counselling Processes; Educational Media; and Library Education. Interested people are requested to send a curriculum vitae to: Dr. Bruce Howe, Associate Dean, Faculty of Education, University of Victoria, P.O. Box 1700, Victoria, B.C. V8W 2Y2. Please note: Preference will be given to candidates eligible for employment in Canada at the time of application. Application deadline January 1, 1983.

**THE UNIVERSITY OF MANITOBA.** Continuing Education Division. Applications are invited for a program co-ordinator in the department of Administration and Organizational Development. This is an academic appointment at the instructor level. Applicants must have graduate training (minimum of Master's degree) preferably in adult or continuing education with appropriate education and/or experience in business administration/data processing. Responsibilities will include the design, development, and implementation of non-degree programs in the area of business administration and data processing. The salary range is \$23,000-\$25,000. Canadian citizens, landed immigrants and

others eligible are especially encouraged to apply. Applications including a curriculum vitae and the names of three referees should be addressed to G. Thompson, Acting Director, Personal and Professional Development Programs, 541 University Centre, University of Manitoba, Winnipeg, Manitoba, Canada, R3T 2N2. Deadline for applications is December 31, 1982.

**UNIVERSITY OF JOZ.** Faculty of Education. Wanted Urgently. Title — Lecturer in the Sociology of Education. Qualifications — Ph.D. in Sociology of Education or in a cognate discipline. Rank — Senior Lecturer and above. Salary — Negotiable. Applications — Please send application and curriculum vitae to The Dean, Faculty of Education, University of Jos, Jos, Nigeria. Effective Date — January 1983. Closing Date — Open.

## ENGINEERING

**SAINT MARY'S UNIVERSITY.** Engineering. Applications are invited for a regular probationary appointment at the Assistant Professor level in the Division of Engineering at Saint Mary's University, Halifax, Nova Scotia. Ph.D. is required. The successful candidate must show evidence of strong teaching and research abilities. The successful candidate will be teaching introductory engineering courses at Saint Mary's University and will have the opportunity to be involved in engineering research with the Faculty of Engineering at the Technical University of Nova Scotia. Appointment is from September 1, 1983. Saint Mary's University offers the first two years of the five-year Bachelor of Engineering degree program in association with the Technical University of Nova Scotia. Applications will be received until the position is filled. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Applications with a full curriculum vitae will be reviewed by three referees should be addressed to: Dr. Peter Boyle, Division of Engineering, Saint Mary's University, Halifax, Nova Scotia, B3H 3C3.

## ENGINEERING CHEMICAL

**UNIVERSITY OF SASKATCHEWAN.** Department of Chemistry and Chemical Engineering. Applications are invited from qualified candidates for appointments as Post-doctoral Fellow or Research Associates in the following fields of chemistry and chemical engineering: — Chemistry Theory of conformational changes and chemical reactions, energy hypersurfaces, quantum chemistry of biomolecules, photochemistry and radiation chemistry of transition metal complexes and high pressure chemistry, laser photochemistry, photophysics and spectroscopy, fluorescence studies of proteins, thermodynamic and dynamic investigations of micromembranes, organometallic chemistry, organic reaction mechanisms, electron spin resonance of solid state defects and organic radicals, spin-Hamiltonian theory, chemical reactions generated by ultrasound, dynamics of fast reactions using ultrasonic techniques. Chemical Engineering — corrosion engineering, slurry pipeline flow, heterogeneous catalysis, production of liquid and gaseous hydrocarbons from coal and biomass, and reactor modelling studies. The positions are tenable initially for one year, renewable, at rates up to the maximum allowed by the NSERC grant regulations. Send curriculum vitae, transcripts and letters from three referees to the undersigned, from whom further particulars may be obtained. Professor D.R. Grant, Head, Department of Chemistry and Chemical Engineering, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0, Canada. Telephone 306-343-2933.

## ENGINEERING CIVIL

**CARLETON UNIVERSITY.** Department of Civil Engineering. Faculty position in Structural Mechanics and Geomechanics. Applications are invited for a faculty position at the Assistant or Associate Professor level in the general area of structural

mechanics and geomechanics. The applicants for this position should have research and/or teaching experience in numerical methods of structural mechanics and/or geomechanics. Specific areas include the application of finite element, boundary element or boundary integral methods to problems in structural mechanics, rock mechanics, fracture mechanics, soil-structure interaction and fluid-structure interaction. The successful applicant will work with both the structural mechanics and geomechanics groups in the development of graduate level research programs. The applicants for this position should possess a Ph.D. in Engineering or Applied Mechanics. This position is subject to budgetary approval. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Applicants should send a detailed résumé, together with names and addresses of three referees, to: Professor A.P.S. Selvadurai, Chairman, Department of Civil Engineering, C.J. Mackenzie Building, Carleton University, Ottawa, Ontario, K1S 5B6.

**UNIVERSITY OF WATERLOO.** Department of Civil Engineering. Faculty position in Geotechnical Engineering. Applications are being accepted for the position of Assistant Professor. The applicant must have a Ph.D. in Engineering and must have, or be eligible for a P.Eng. Preference will be given to applicants with research interests or experience in a geotechnical specialty such as theoretical soil mechanics, analytical and numerical analyses, or soil dynamics. The Department is one of the largest in Canada and offers a co-operative undergraduate program (B.A.Sc.) as well as graduate programs leading to an M.A.Sc. or Ph.D. degrees. Programs and facilities are available in the areas of geotechnical, structural, environmental, transportation and hydraulic engineering, as well as engineering mechanics, experimental mechanics, hydrology and materials science. Programs and facilities are also available in the Department of Earth Sciences. The successful applicant will be involved with undergraduate and graduate teaching and will be expected to conduct geotechnical research. An appointment is planned for January 1983 or later. Salary is commensurate with qualifications and experience. A detailed curriculum vitae, a statement of teaching and research interests, and the names of three referees should be sent to Dr. H.H.E. Leipholz, Chairman, Department of Civil Engineering, University of Waterloo, Waterloo, Ontario, N2L 3G1. Closing date for receipt of applications is December 31, 1982. In accordance with Canadian Immigration requirements this advertisement is directed to Canadian citizens and permanent residents.

## ENGINEERING ELECTRICAL/COMPUTER

**McMASTER UNIVERSITY.** Department of Electrical and Computer Engineering. Two tenurable faculty positions at the Assistant Professor, or in an exceptional case, at the Associate Professor rank are available effective July 1, 1983. The minimum salaries for the two ranks in 1982-83 are \$23,540 per annum and \$30,420 per annum respectively. For the selected candidates, the salaries will be set commensurate with qualifications and experience. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Candidates must have a doctorate in electrical or computer engineering in addition to demonstrated research and teaching abilities. One of the vacancies is in the area of computer and digital systems whereas for the other, expertise is required in one or more of the following areas: (a) electronic devices, (b) microwaves, (c) digital control or (d) electrical machines. Résumés, including the names and addresses of three referees, should be submitted to Dr. Nagesh K. Sinha, Chairman, Department of Electrical and Computer Engineering, McMaster University, Hamilton, Ontario, Canada, L8S 4L7. Closing date is January 15, 1983.

**CONCORDIA UNIVERSITY.** Electrical Engineering. Applications are invited for a tenure-track faculty position in the Department of Electrical Engineering at Concordia University. The position will involve undergraduate and graduate teaching in Electrical and Computer Engineering, and research in one or more of the following areas: electronic and communication cir-

cults and systems, computer-aided analysis and design, microprocessor applications, digital hardware, digital control. Applicants should hold a doctorate in an appropriate area and be familiar with modern trends in their area. Industrial experience will be considered an asset. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada. If no suitable candidate is found, the search may be extended to other candidates. Applications, which should include curriculum vitae, and the names of three referees, should be addressed to: Dr. A. Antoniou, Chairman, Electrical Engineering Department, Concordia University, 1455 de Maisonneuve Blvd. W., Montreal, P.Q., Canada, H3G 1M8.

**QUEEN'S UNIVERSITY AT KINGSTON.** Department of Electrical Engineering. Applications are invited for an academic position in one or more of the following areas: computer engineering, electronics, microprocessors and applications to control or communications. Background in teaching and research desirable. Industrial experience and professional Engineering status advantageous. Basic duties will include undergraduate and graduate teaching, research compatible with the departmental program, and participation with other academic staff in the academic and administrative affairs of the department. Rank and salary are dependent upon qualifications and experience. Candidates of both sexes are equally encouraged to apply. In compliance with regulations of the Department of Manpower and Immigration, only Canadians or Landed Immigrants to Canada need apply for this position. Submit detailed curriculum vitae with letters and names of three referees, to P.H. Witke, Head, Department of Electrical Engineering, Queen's University, Kingston, Ontario, K7L 3N6.

**TECHNICAL UNIVERSITY OF NOVA SCOTIA.** Department of Electrical Engineering. Vacant position in Electrical Electronics and Computer Engineering. A Senior Faculty member is needed to fill a vacant tenure-track position in the Department of Electrical Engineering, in the rank of Associate Professor or Full Professor. Candidates are expected to supervise graduate students at the M. Eng. and Ph.D. level, and provide leadership in the development and teaching of graduate and undergraduate programs. Excellent research opportunities exist in both the Department of Electrical Engineering, and also in conjunction with the Applied Microelectronics Institute and the Department of Computer Science which are located on the same campus. Please send résumé to: Dr. W.Z. Fam, Professor and Head, Department of Electrical Engineering, Technical University of Nova Scotia, P.O. Box 1000, Halifax, Nova Scotia, B3J 2X4.

**UNIVERSITY OF SASKATCHEWAN.** Electrical Engineering Department. A tenure-track faculty position starting in July 1993 is available for an active researcher able to present undergraduate and graduate classes. A Ph.D. is necessary and industrial experience is regarded as an important asset. The subject areas of interest at this time particularly include: digital electronics including signal processing and circuit theory. It should also be noted that several positions in other areas of work will become available due to retirements in the Electrical Engineering Department, periodically during the next five years. An expression of interest by applicants at this time will be recorded, although formal applications must await specific advertisements. The subject interests for those positions will include: biomedical, power electronics, digital communications, microelectronics, microprocessor applications, analog circuit theory including low noise, high frequency designs. Reply before December 31, 1992 to the Chairman, Dr. A.L. Hoyle, Electrical Engineering Department, Faculty Search Subcommittee, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

**CARLETON UNIVERSITY.** Department of Systems and Computer Engineering. Computer Engineering Faculty Position. Carleton University's Department of Systems and Computer Engineering has openings for preliminary (tenure-track), term, or visiting appointments at the assistant or associate professor level. Outlets will include research and teaching at the undergraduate and graduate levels in the area of computer engineering (programming languages, digital machine architecture, digital systems, microprocessors, computer communications, and associated

hardware and software). Positions are subject to budgetary approval. Research experience includes a Vax 11/750 and an Ethernet LAN with state-of-the-art professional workstation. A U.S.P. machine located in the School of Computer Science will be linked to the Department by the LAN. Applicants should have a Ph.D. degree or equivalent. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Letters of inquiry and application should be addressed to: The Chairman, Department of Systems and Computer Engineering, Carleton University, Ottawa, Ontario, Canada, K1S 5B6.

## ENGINEERING MECHANICAL

**TECHNICAL UNIVERSITY OF NOVA SCOTIA.** Mechanical Engineering. The Department of Mechanical Engineering at the Technical University of Nova Scotia invites applications for a full-time tenure-track position in the area of thermal engineering to be filled Jan. 1 or July 1, 1993. The position is open to candidates holding a doctorate. Teaching responsibilities will be at the undergraduate and graduate level in the areas of heat transfer, thermodynamics, combustion, and energy conversion. Joint research activities with the newly opened Centre for Energy Studies on the Tech campus is encouraged. Industrial experience will be an asset. Salary and rank will be commensurate with qualifications and experience. A detailed curriculum vitae and the names of three referees should be sent to: Dr. C.R. Hazell, Professor and Head, Department of Mechanical Engineering, Technical University of Nova Scotia, P.O. Box 1000, Halifax, N.S., Canada, B3J 2X4.

**McGILL UNIVERSITY.** Department of Mechanical Engineering. Applications are invited for two tenure-track appointments at the assistant or associate professor level in the areas of (i) Applied Thermodynamics and Energy Conversion (ii) Control Theory — Robotics and CAD-CAM. Ph.D. degree or equivalent required; industrial experience a definite asset. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Applications, including curriculum vitae, should be submitted to: The Chairman, Dept. of Mechanical Engineering, McGill University, 817 Sherbrooke St. West, Montreal, Quebec, H3A 2K6.

**UNIVERSITY OF WATERLOO.** Department of Mechanical Engineering. Applications are being accepted for tenure-track positions in the following areas: 1. Control and Automation, including both digital and analog control; 2. Computer-aided Design and Manufacturing (CAO/CAM); 3. Thermal and Fluids Engineering, particularly combustion; but the ability to teach fluid mechanics and thermodynamics would be an asset; 4. Materials Engineering, to complement present specialization in casting, welding, metal-working, fatigue and fracture. Salary and rank for these positions will be commensurate with experience and qualifications. A detailed curriculum vitae with a statement of teaching experience and research interests, and the names of three referees should be sent to: Professor H.W. Kerr, Chairman, Department of Mechanical Engineering, University of Waterloo, Waterloo, Ontario, N2L 3G1. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

## ENGLISH

**UNIVERSITY OF VICTORIA.** English. The Department of English at the University of Victoria invites applications for a limited number of sessional appointments to teach Intercession (May-June, 1983) and Summer Session (July-August, 1983). Candidates should submit a curriculum vitae, stating academic and teaching experience. Applications should be addressed to: Dr. Edward Berry, Chairman, Department of English, University of Victoria, P.O. Box 1700, Victoria, B.C., V8W 2Y2, no later than Friday, 31 October, 1982. Canadian Immigration regulations now require applicants to assess applications from Canadian citizens and permanent residents of Canada before assessing applications

from other persons.

**BISHOP'S UNIVERSITY.** English. Applications are invited for a specialist in Victorian literature with secondary interest in modern British literature. This is a tenure stream position. Ph.D. or equivalent is required. Rank will be commensurate with qualifications, experience and publications. Applications with curriculum vitae and names of three referees should be addressed to: Dr. K.J. Kuepper, Dean of the Faculty, Bishop's University, Lennoxville, Québec, J1M 1Z7 prior to January 31, 1993.

**BISHOP'S UNIVERSITY.** English. Applications are invited for a position in Medieval and Renaissance literature. Ph.D. or equivalent is required. This is a tenure stream position. Rank will be commensurate with qualifications, experience and publications. Applications with curriculum vitae and names of three referees should be addressed to: Dr. K.J. Kuepper, Dean of the Faculty, Bishop's University, Lennoxville, Québec, J1M 1Z7 prior to January 31, 1993.

**UNIVERSITY OF WESTERN ONTARIO.** Department of English. Conditional upon the availability of funds, an opening is expected for 1983-84 (effective July 1, 1983) in Renaissance non-dramatic literature. This will be a limited term or probationary, Assistant or Associate Professor level appointment. The nature and duration of the contract dependent upon the qualifications and experience of the applicant. For the Assistant level (minimum \$22,500), Ph.D. or equivalent expected, with teaching experience and publications. For the Associate level (minimum \$26,750), candidates should have international scholarly stature, with excellent teaching credentials. In accordance with Canadian Immigration requirements this advertisement is directed to Canadian citizens and permanent residents. Closing date for applications: March 1, 1993. Send applications to: Professor James F. Woodruff, Chairman, Department of English, University of Western Ontario, London, Ontario, N6A 3K7. N.B. Only complete applications, which include a letter of application, a curriculum vitae, transcripts of all university records, and the names of three referees whom the applicant has asked to write on his/her behalf will be considered. Position subject to budget approval. An Equal Opportunity Employer.

**UNIVERSITY OF TORONTO.** English. Assistant Professorship in English. This is a tenure-track appointment to be made at an appropriate point on the Assistant Professor scale. Ph.D. preferably with teaching experience. Specialist in twentieth-century British or American Literature. The candidate should have a research and/or publication record sufficient to indicate a rapid progression toward graduate teaching. Candidates should send curriculum vitae, and names and addresses of three referees to: O. Fox, Chairman of English, University of Toronto, Toronto, Ontario, Canada, M5S 1A1. In accordance with Canadian Immigration requirements, this advertisement is directed toward Canadian citizens and permanent residents. Closing date for application: 31 December, 1992. Date of appointment: 1 July 1993.

**THE UNIVERSITY OF LETHBRIDGE.** Department of English. 1. One position at the Lecturer or Assistant Professor level. 2. Ph.D. or near completion in either Eighteenth Century or Victorian Literature. Preference will be given to candidates with some teaching experience and scholarly publication. In accordance with Canadian Immigration regulations, this advertisement is directed to Canadian citizens and permanent residents of Canada. 3. Applicant must have a commitment to teaching at the undergraduate level and to research. 4. Salary minima: Lecturer — \$21,688 (1982-83); Assistant Professor — \$21,230 (1982-83). 5. Applications including a curriculum vitae, transcripts and three letters of reference should be sent to: Mr. Brian F. Tyson, Chairman, Department of English, The University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M6. 6. Two-year terminal position, beginning 1 July 1993. Closing date: When position is filled.

## FILM

**YORK UNIVERSITY.** Faculty of Fine Arts. Visiting Lecturer in Film/Videos Production. To be based at Jamia Millia University, New Delhi, India. Responsibilities include: technical co-ordination and assistance in

film and video courses and productions, as well as some teaching. Successful applicant will be team member of project, funded by CIDA, to develop a graduate school of Mass Communications. Candidates should have film production, and radio and TV broadcast experience, ENG-EFF; familiarity with P.A.L. technology; and preferably some teaching experience. This is a one-year contractual appointment to begin June 1, 1993 and end June 30, 1994. Salary is Cdn. \$19,010.00 (Lecturer, floor level, 1982-83). Apply with curriculum vitae and names of three referees to: Ken Danciger, Chairman, Department of Film, Faculty of Fine Arts, York University, Downsview (Toronto), Ontario, M3J 2R6. Application deadline is January 3, 1993. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

## FINANCE/MANAGEMENT SCIENCE

**SAINT MARY'S UNIVERSITY.** Department of Finance and Management Science. Applications are invited for a faculty position in the Department of Finance and Management Science beginning September 1, 1993. Applicants should have a Ph.D. (or be near completion). The successful candidate will teach graduate and undergraduate courses in one or more of the following areas: (1) quantitative/management science, (2) information systems, and (3) computer science. The rank of the position is open and salary is competitive. In accordance with Canadian Immigration requirements, this advertisement is directed to Dr. Earl J. Robinson, Chairperson, Department of Finance and Management Science, Saint Mary's University, Halifax, Nova Scotia, B3H 3C3, (902) 429-9780.

**SAINT MARY'S UNIVERSITY.** Department of Finance and Management Science. Applications are invited for a faculty position in the Department of Finance and Management Science beginning September 1, 1993. Applicants should have a Ph.D. (or be near completion). The successful candidate will teach graduate and undergraduate finance courses. The rank of the position is open and the salary is competitive. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada. Applications should be sent to: Dr. Earl J. Robinson, Chairperson, Department of Finance and Management Studies, Saint Mary's University, Halifax, Nova Scotia, B3H 3C3, (902) 429-9780.

## FOOD SCIENCE

**UNIVERSITY OF MANITOBA.** Food Science Department. The Department of Food Science invites applications for a full-time term appointment at the rank of Lecturer in the area of food processing with particular emphasis on water and energy conservation. Although Ph.O. candidates are preferred, consideration will be given to M.Sc. applicants with five or more years experience. The successful candidate will be expected to carry out both teaching and research activities compatible with departmental goals. The current minimum starting salary for a lecturer is \$18,460. The University encourages both women and men to apply for this position. In accordance with Canadian Immigration requirements, this position is directed to Canadian citizens and permanent residents. Position availability is subject to final budgetary approval. Interested applicants should forward a résumé to the Head, Department of Food Science, University of Manitoba, Winnipeg, Manitoba, R3T 2N2. Closing date for receipt of applications is 31 December 1992.

## FRENCH

**UNIVERSITY OF GUELPH.** Department of Languages. Position: French (Applied Linguistics). A probationary (tenurable) appointment at the rank of Assistant Professor. Qualifications: Ph.O. in Applied Linguistics required. Experience in language-teaching desirable. Outlets: The teaching of French as a second language at the post-secondary level; the history of the French language. Participation in develop-

ment of methods of teaching French as a second language. Salary: The current (1982-83) floor salary of the rank of Assistant Professor is \$23,805.00. Applications with full c.v. to: Dr. J.M. Bell, Chairman, Department of Languages and Literatures, University of Guelph, Guelph, Ontario, N1G 2W1. Candidates should arrange to have three letters of reference sent directly. Date of Appointment: July 1st, 1983. Closing date of Applications: February 15th, 1983. Position subject to final budgetary approval. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF ALBERTA.** Faculty of Arts. The Department of Romance Languages invites applications for a tenure-track appointment in French at the Assistant Professor level commencing July 1, 1983. Ph.D., teaching excellence and a demonstrated commitment to research in one or more areas of French Literature required. Duties will include teaching of language and literature at all levels. Current floor of Assistant Professor is \$27,720. Applications are to be sent to Prof. J.A. Greore, Chairman, Department of Romance Languages, University of Alberta, Edmonton, Alberta, T6G 2E6, and will be accepted until January 1, 1983. The University of Alberta is an equal opportunity employer but, in accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

### GEOGRAPHY

**UNIVERSITY OF GUELPH.** Department of Geography. Applications are invited for the following position: Assistant Professor. Anticipated tenure-track position, contingent upon funding, July 1983. Ph.D. required. Seeking person to teach geology, air photo interpretation/remote sensing and physical geography at introductory levels. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents. Send application with curriculum vitae and names of three referees by December 31, 1982 to: Dr. W.R.D. Sewell, Chairman, Department of Geography, University of Victoria, P.O. Box 1700, Victoria, British Columbia, Canada, V8W 2Y2.

### GEOLOGY

**UNIVERSITY OF TORONTO. ISOTRACE Laboratory.** Applications are invited for the position of Research Associate to work on problems connected with ultra-sensitive isotopic analysis of geological materials. Applicants should have a Ph.D. and at least two years post-doctoral experience in the field of ion microprobe techniques applied to geological problems. A familiarity with nuclear physics (especially tandem accelerator methods) would be highly desirable. The position will become available in March 1983, and will be initially for a period of one year, renewable, at \$18,000 p.a. or up to the maximum allowed by NSERC grant regulations. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Applications, with curriculum vitae and letters of two referees, should be sent, before January 15, 1983, to Dr. J.C. Rucklidge, Department of Geology, University of Toronto, Toronto, Ontario, M5S 1A1.

**McMASTER UNIVERSITY.** Geology. The Department of Geology, McMaster University, invites qualified Earth Scientists to apply for positions here as NSERC University Research Fellows. Canadian citizens and landed immigrants only are eligible for these awards. Postdoctoral experience is not essential, but applicants should be able to demonstrate research ability. Successful applicants will be appointed Assistant Professors. Term of the appointments is normally for 5 years, depending on satisfactory performance, and possibly renewable for another 5 years. Fellows will spend most of their time in research, but will be required to teach one full undergraduate course. Minimum starting salary in 1982-83 will be \$23,500, with allowance made for related experience. Successful applicants will be provided with a basic minimum research grant of \$10,000 per year for 3 years, subject to availability of funds. This grant may

be supplemented, and university research fellows are also eligible to apply for other types of funding, including other sorts of NSERC research grants. The Geology Department at McMaster is an acknowledged leader in the fields of geochemistry, sedimentology and paleontology, and would welcome the opportunity to strengthen any one of these areas. We are interested in broadening our coverage, however, and qualified persons in any field of geology and geophysics are invited to apply. Interested persons should send a current curriculum vitae and a covering letter to: Dr. M.J. Risk, Chairman, Search Committee, Department of Geology, McMaster University, Hamilton, Ontario, L8S 4M1.

**QUEEN'S UNIVERSITY.** Department of Geological Sciences. Engineering Geologist. Applications are invited for a position in the Department of Geological Sciences starting in September 1983, the rank of the appointment being commensurate with experience. Citizens of any nationality may apply but Department of Employment and Immigration regulations require that preference is given to Canadian nationals and landed immigrants to Canada. Candidates of either sex are equally encouraged to apply and should have a Ph.D. in engineering geology, engineering geophysics, applied geology, hydrogeology or a related field. The successful candidate will be expected to teach at the undergraduate and graduate levels and to undertake a research programme in his or her area of specialty. Candidates whose qualifications would permit them to become registered professional engineers in Ontario would be given preference. The application should include a résumé and the names of at least three referees. Send to: Professor Edward Farrar, Chairman, Department of Geological Sciences, Queen's University, Kingston, Ontario, Canada, K7L 3N6.

**UNIVERSITY OF SASKATCHEWAN.** Geology. University of Saskatchewan, Department of Geological Sciences, has vacant tenurable position, to be filled by July 1, 1983, for geologist or geochemist with broad interdisciplinary interests. Department has particular need for geochemist-sedimentologist specialized in carbonate evaporite rocks and geochemical petrologist specialized in application of thermodynamics to metamorphic rocks. Preference may be given to applicants in these fields. Applicants should hold, or be about to receive, the Ph.D. or equivalent degree, should be prepared to teach undergraduate and graduate courses and to build and maintain a vigorous research program. Salary commensurate with qualifications and experience. Applicants should send letter outlining their teaching and research goals, accompanied by a full c.v. including the names of at least three referees to: Dr. W.G.E. Caldwell, Head, Department of Geological Sciences, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, S7N 0W0. Appointments will be made in accordance with Canadian Immigration regulations.

### GERMANIC STUDIES

**UNIVERSITY OF VICTORIA.** Germanic Studies. Full-time Asst. Prof. Ph.D. Applicants with main specialization in the following area: Nineteenth Century; expertise also preferred in Medieval Studies or Literature and Music. Salary will be commensurate with qualifications and experience. The availability of this position is subject to budgetary approval. Applications, including a curriculum vitae and references, should be sent to: Dr. R.T.K. Symington, Chairman, Department of Germanic Studies, University of Victoria, Victoria, B.C. V8W 2Y2. Effective date of appointment, July 1, 1983. Closing date for receipt of applications, January 31, 1983. Canadian Immigration regulations now require the University to assess applications from Canadian citizens and permanent residents of Canada before assessing applications from other persons.

### HEALTH SCIENCES

**McMASTER UNIVERSITY.** Faculty of Health Sciences. Applications are invited for positions of Assistant Professor to begin in July, 1983. We seek individuals with research interest in molecular biology, particularly in

the areas of control of gene expression, eukaryotic systems, and isolation and genetic regulation of human genes of clinical significance. Preference will be given to individuals who have direct experience with recombinant DNA technology and who can contribute to the development of an applied based biotechnology programme. The individual selected will be expected to obtain independent research grant support and pursue an active and strong research programme. A Ph.D. or M.D. degree with at least two years of postdoctoral experience is required. Applicants should submit curriculum vitae, statement of research interests and names of three referees to: Dr. H.P. Ghosh, Department of Biochemistry, McMaster University, 1200 Main Street West, Hamilton, Ontario, L8N 3Z5, Canada.

### HISTORY

**McGILL UNIVERSITY.** History. The Department of History, McGill University, invites applications for a tenure-track appointment, subject to budgetary approval, at Assistant or Associate Professor rank, in East European History, exclusive of Russia. A completed Ph.D. degree, considerable teaching experience at the undergraduate and graduate levels, and substantial publications are required. Salary will be commensurate with rank. Enquiries and applications including curriculum vitae, and three letters of reference should be addressed to: Professor P.C. Hoffmann, Chairman, Department of History, 855 Sherbrooke Street West, Montreal, Quebec, H3A 2T7, Canada. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. The University reserves the right not to make an appointment.

**McMASTER UNIVERSITY.** History. The Department of History at McMaster University invites applications for a two-year contractually limited appointment at rank of Assistant Professor in the area of Modern Canadian History, preferably focussing on politics or regionalism. Ph.D. is essential. Teaching experience and publications are required. Duties will include teaching at the graduate and undergraduate level, especially Level II Canadian survey. Salary is dependent on qualifications. Current base for Assistant Professor is \$23,540.00 per annum. Applications, along with curriculum vitae and the names and addresses of three referees should be sent to: Dr. J.P. Campbell, Chairman, Department of History, McMaster University, 1280 Main Street West, Hamilton, Ontario, L8S 4L9. Applications will be received until position is filled. The effective date of this appointment is July 1, 1983. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF TORONTO.** History. Assistant Professorship in History. This is a tenure-track appointment to be made at an appropriate point on the Assistant Professor scale. Ph.D. preferably with teaching experience. The History of International Relations: the European System in the nineteenth and twentieth centuries. Applicants should have an ongoing research interest within this field as well as a competence to teach survey and advanced undergraduate courses in Modern European History. The candidate should have a research and/or publication record sufficient to indicate a rapid progression toward graduate teaching. Candidates should send curriculum vitae, the name and addresses of three referees to Professor Paul Rutherford, Chairman, Department of History, University of Toronto, Toronto, Ontario, Canada, M5S 1A1. In accordance with Canadian Immigration requirements, this advertisement is directed toward Canadian citizens and permanent residents. Closing date for applications: 31 December, 1982. Date of Appointment: 1 July 1983.

### HISTORY/HUMANITIES

**SIMON FRASER UNIVERSITY.** Department of History/Humanities Program. Applications are invited for a tenure-track position at the rank of Assistant Professor, commencing September 1, 1983, for a classical historian who would teach at least half-time in the history department, but who would

also teach interdisciplinary courses in classical culture in the Humanities Program. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. The successful candidate will have a demonstrated commitment to research and teaching. Applicants should send a curriculum vitae and the names of three referees to Professor Hugh Johnston, Chairman, Department of History, Simon Fraser University, Burnaby, B.C. V5A 1S6, by February 15, 1983.

### ITALIAN

**YORK UNIVERSITY.** Italian. One or more contractually limited positions in 1983-1984. Sessional Assistant Lecturer, Sessional Lecturer or Sessional Assistant Professor. Salary according to rank. M.A. or Ph.D. Primary interest and demonstrated ability to teach Italian language courses at all levels. Candidates with additional competence in literature, translation, language and culture, or literature and film courses preferred. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and landed immigrants to Canada. Position(s) subject to budget approval by the University. Deadline for applications: January 10, 1983. Applicants should arrange to have curriculum vitae, two letters of recommendation, attestations as to demonstrated teaching skill and transcripts sent to: Professor W.P. Ahrens, Department of Languages, Literatures and Linguistics, York University, 4700 Keele Street, Downsview, Ontario, M3J 1P3.

### JAPANESE

**UNIVERSITY OF VICTORIA.** Centre for Pacific and Oriental Studies. Regular full-time Assistant Professor, beginning July 1, 1983. To teach undergraduate courses in Japanese at all levels. Applicants should have Ph.D. and native or near native fluency in Japanese, demonstrated success in teaching Japanese preferred. Salary commensurate with experience and qualifications. Position subject to funding. Write to: Harry Hsiao, Acting Director, Centre for Pacific and Oriental Studies, University of Victoria, P.O. Box 1700, Victoria, B.C., Canada, V8W 2Y2. Deadline: January 1, 1983. Canadian Immigration regulations require the University to assess applications from Canadian citizens and permanent residents of Canada before assessing applications from other persons.

### LAW

**THE UNIVERSITY OF ALBERTA.** Law. Department of Industrial and Legal Relations in the Faculty of Business Invites applications for a full-time tenure-track position from those with teaching and research interests in Legal Relations. Applicants must hold the LL.B. or J.D. degree; further training in law or in a related discipline is highly desirable. The Department offers programs of study in both industrial relations and legal relations, the latter being a new and developing field of study in Canada which provides a broadly-based interdisciplinary approach to legal studies in business and society. The successful applicant will participate in course and program development, and will have a strong interest in research. The position is available in the Salary Schedule for rank and based on qualifications. Ranges are: Assistant Professor \$27,720 to \$39,820; Associate Professor \$35,420 to \$51,658; Full Professor from \$46,010. In addition, market supplements to ensure competitive offers are negotiable. Canadian citizens and permanent residents will be given preference. Applications should include a curriculum vitae and the names of at least three referees, and should be sent to Linda Sherwood, Department of Industrial and Legal Relations, 321 Athabasca Hall, The University of Alberta, Edmonton, Alberta, Canada, T6G 2E8; telephone (403) 432-3943. The University of Alberta is an equal opportunity employer.

**UNIVERSITY OF SASKATCHEWAN.** College of Law. The College of Law, University of Saskatchewan, invites applications for

one-year term appointments and any tenurable positions that may become vacant with effect from July 1, 1983. Assistant professor will be the likely level of appointment. A graduate degree in law, significant experience in practice or equivalent is required. Salary will be commensurate with qualifications and experience. Applications, accompanied by a detailed curriculum vitae and the names of three references, should be addressed to Dean Daniel Ish, College of Law, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. In accordance with Canadian Immigration regulations, this advertisement is directed to Canadian citizens and landed immigrants.

**UNIVERSITY OF ALBERTA, Faculty of Law.** Faculty of Law, University of Alberta, is able to make one full-time appointment (salary and rank negotiable) with effect from July 1983. Preference will be given to candidates showing a strong commitment to full-time teaching and scholarly writing, an interest and experience in Health Law and a proven teaching record. Contact the Dean's Office, Faculty of Law, 465 Law Centre, The University of Alberta, Edmonton, Alberta, T6G 2H5. The University of Alberta is an equal opportunity employer, but in accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Deadline for applications, December 31, 1982.

## LINGUISTICS

**YORK UNIVERSITY, Linguistics.** One or two contractually limited appointments for 1983-1984. Sessional Lecturer or Sessional Assistant Professor, Ph.D. preferred; teaching experience required. Salary commensurate with experience. Applicants must be able to teach undergraduate courses in at least three of the following areas: phonology, syntax, sociolinguistics, semantics, field methods, structure of English, introduction to language, history of the Romance Language family. In accordance with Canadian Immigration requirements this advertisement is directed to Canadian citizens and landed immigrants to Canada. Position(s) subject to budget approval by the University. Deadline for applications: January 10, 1983. Applicants should arrange to have curriculum vitae, two letters of recommendation, attestations as to demonstrated teaching skill and transcripts sent to: Professor W.P. Ahrens, Department of Languages, Literatures and Linguistics, York University, 4700 Keele Street, Downsview, Ontario, M3J 1P3.

## MANAGEMENT

**SAINT MARY'S UNIVERSITY.** Department of Management. Applications are invited for a teaching position in the Department of Management. Rank is open. Salary is competitive. Duties include the teaching of Policy, Social Issues, Management and/or Industrial Relations. Effective date of appointment is September 1, 1983 (subject to budgetary authorization). Enquiries should be directed to: Dr. S.G. Pendse, Department of Management, Saint Mary's University, Halifax, Nova Scotia, B3H 3C3, (902) 429-9780.

**SAINT MARY'S UNIVERSITY.** Department of Management. Applications are invited for a teaching position in the Department of Management. Rank is open. Salary is competitive. Duties include the teaching of Organizational Behaviour, Organizational Theory and/or Personnel. Effective date of appointment is September 1, 1983 (Subject to budgetary authorization). Enquiries should be directed to: Dr. S.G. Pendse, Chairperson, Department of Management, Saint Mary's University, Halifax, Nova Scotia, B3H 3C3, (902) 429-9780.

## MATHEMATICS

**UNIVERSITY OF BRITISH COLUMBIA.** Mathematics. One tenure-track position starting July 1, 1983, at the level of Assistant Professor. Appointment to this position may be subject to budgetary restrictions. Requirements are Ph.D. and excellence in research and teaching. Duties include graduate and undergraduate teaching and research. C.V. and three let-

ters of reference to be sent to Professor D.W. Boyd, Department of Mathematics, The University of British Columbia, No. 121-1984 Mathematics Road, Vancouver, B.C., Canada, V6T 1Y4. The closing date is February 15, 1983, or whenever the position is filled. The University is an equal opportunity employer. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.

**YORK UNIVERSITY, Department of Mathematics.** Applications are invited for several tenure-track positions at the Assistant or Associate Professor level, and also for several limited term sabbatical replacement positions of one, two or three years duration. These positions, all of which commence July 1, 1983, are subject to budgetary and Senate approval. Special consideration will be given to applicants in statistics, especially applied statistics, or in operations research. Applicants should have proven ability or demonstrated potential for research and teaching. Cross appointments with other departments are possible. Applications with detailed curriculum vitae should be sent to: P. Olin, Chairman, Department of Mathematics, N520 Ross Building, York University, Downsview (in Toronto), Ontario, M3J 1P3, Canada. Applicants should request three (3) referees to send letters of recommendation to the same address. In accordance with Canadian Immigration requirements, this ad is directed to Canadian citizens and permanent residents of Canada.

**TRENT UNIVERSITY, Department of Mathematics.** Applications are invited for two one-year sessional appointments in the assistant or associate professor range for the academic year 1 July 1983 to 30 June, 1984. The appointments will be in the areas of statistics and applied mathematics including numerical analysis and classical mechanics. Duties will involve instruction in undergraduate courses including some instruction in general first year mathematics. Applications including a curriculum vitae and the names of three referees should be sent before February 28, 1983 to Professor E.A. Maxwell, Chairman, Department of Mathematics, Trent University, Peterborough, Ontario, K9J 7B8. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**MCMASTER UNIVERSITY, History of Mathematics.** Research Assistantship. The Bertrand Russell Editorial Project at McMaster University is preparing an edition of Bertrand Russell's shorter writings and certain unpublished books. The edition will include some ten volumes of his philosophical papers. The Project has a vacancy for a Research Assistant in the history of mathematics to assist in the preparation of the philosophical papers. Applicants should have special knowledge of late nineteenth and early twentieth century mathematics (preferably in geometry or foundations of arithmetic). Fluency in French and/or German would be an advantage. A Ph.D. degree is preferred. The work will involve the interpretation and reconstruction of manuscripts primarily those written by Russell between 1895 and 1903 as well as the preparation of commentary and annotation required for a scholarly edition. The post offers the successful applicant the opportunity to work closely with a major scholarly editing project as well as opportunities for independent research in the Russell Archives at McMaster. The Research Assistantship will begin on 1 June 1983 and will be for two years with the possibility of renewal. Salary will be not less than \$22,000 for applicants holding a Ph.D. degree. Applicants should send a curriculum vitae and the names of three referees to Dr. N. Griffin, The Bertrand Russell Editorial Project, McMaster University, Hamilton, Ontario, Canada, L8S 4M2. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Applications must be received by 31 January 1983.

## MEDICINE

**UNIVERSITY OF TORONTO.** Banting and Best Department of Medical Research. Immunology/Immunogenetics, Endocrinology, Molecular Biology as related to diabetes. The Banting and Best Department of Medical Research is seeking candidates for the position of Assistant Professor to be funded through the Banting

and Best Diabetes Centre, University of Toronto. Two positions are available July 1, 1983 and will carry an initial appointment of five years at a competitive salary. Candidates should have a strong background in one or more of the areas of Immunology/Immunogenetics, Endocrinology or Molecular Biology and be prepared to develop a strong research program in one or more of the following areas: Immunology as related to diabetes, mechanisms of insulin action or genetics as related to diabetes. Successful candidates will be expected to attract independent research grants and to spend at least 75% of their time in research. Teaching obligations will be minimal. Applicants should forward a curriculum vitae, an outline of research interests and the names of three references to Dr. David H. MacLennan, Professor and Chairman, Banting and Best Department of Medical Research, University of Toronto, 112 College Street, Toronto, Ontario, Canada, M5G 1L5.

**MCMASTER UNIVERSITY, Department of Medicine.** Neurologist wanted with expertise in EEG, EMG and evoked potential studies. Successful applicant will be required to undertake neurophysiological research on the autonomic nervous system and to develop computer-based techniques for clinical neurophysiology. Background in electronics and computing necessary. Apply with curriculum vitae to Dr. A.J. McComas, Professor, Department of Medicine, McMaster University, Health Sciences Centre, 1200 Main St. W., Hamilton, Ontario, L8N 3Z5.

**UNIVERSITY OF ALBERTA, Medicine.** Viral Immunopathologist. A position for a distinguished senior scientist may become available with the Neurovirology Research Department, Departments of Medical Microbiology and Medicine, Faculty of Medicine, University of Alberta. Candidates to be considered must be medically trained and have advanced research experience in virology and immunopathology at the Ph.D. level. Candidates should also have demonstrated ability to lead an international recognized multidisciplinary group (virologists, immunologists, biochemists, cell biologists, neurologists) and to carry out highly topical research in the study of the role of viruses in neurological disorders. This position will depend on successful application to a granting agency for a career scientist award. Send application letters, including a recent curriculum vitae, to: Dr. D.L.J. Tyrrell, Director, Neurovirology Research Unit, Faculty of Medicine, University of Alberta, Edmonton, Alberta, T6G 2G3.

**UNIVERSITY OF ALBERTA, Faculty of Medicine.** Neonatologist. The Faculty of Medicine of the University of Alberta, Edmonton, Alberta invites applications for a 5th Neonatologist required for a large Neonatal Intensive Care Unit and for an active clinical, educational and research program in the University of Alberta Hospital. The individual must be eligible for or in possession of F.R.C.P.(C). The position is a full-time geographic position at the University of Alberta Medical School and the Northern and Central Alberta Perinatal Program. Salary and academic rank to commensurate with qualifications and experience. The University of Alberta is an equal opportunity employer, but in accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada. Applicants are requested to submit a complete curriculum vitae and 3 academic references to: Dr. David Schiff, Division of Newborn Medicine, Department of Pediatrics, 4-117 Clinical Sciences Building, University of Alberta Medical School, Edmonton, Alberta, T6G 2G3, Canada.

**UNIVERSITY OF ALBERTA, Medicine.** An opening for a full-time position in the Division of Hematology, University of Alberta is available. The successful candidate will have experience in the operation of a Bone Marrow Transplant Program and will be prepared to accept leadership of this group at the University of Alberta. In addition to responsibilities for the above program, it is expected that candidates will be actively engaged in laboratory research and will be able to carry on their research endeavours as an independent investigator. Opportunities will be available to participate in the educational activities of the Division and the practice of general Clinical Hematology. The successful candidate will be appointed at a rank commensurate with qualifications of Assistant Professor to Professor. Applicants are expected to be FRCP(C) with a subspecialty in Hematology. The deadline

for submitting applications will be December 31, 1982. The University of Alberta is an equal opportunity employer but in accordance with Canadian Immigration requirements this advertisement is directed to Canadian citizens and permanent residents. Send applications to: Mr. T. Shell, Department of Medicine, Room 8-120, Clinical Sciences Building, University of Alberta, Edmonton, Alberta, T6G 2H1.

**QUEEN'S UNIVERSITY, St. Mary's OF THE LAKE HOSPITAL, Medicine.** Geriatrician for St. Mary's of the Lake Hospital, Kingston, Ontario, Canada. The Department of Geriatric and Continuing Care Medicine at St. Mary's of the Lake Hospital, a Queen's University affiliated institution, has an opening for a physician, a certificate in Internal Medicine with special interests in Geriatrics, to participate in a program of patient care, teaching, and research. Salary and academic rank will be commensurate with training and experience. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Candidates of both sexes are equally encouraged to apply. Application and curriculum vitae, along with names and addresses of three referees, should be sent to: Gilbert Rosenberg, M.D., Physician-in-Chief, Department of Geriatric and Continuing Care Medicine, St. Mary's of the Lake Hospital, 340 Union Street, Box 3600, Kingston, Ontario, Canada, K7L 5A2.

**QUEEN'S UNIVERSITY, Medicine.** Basic Scientist, Ph.D. Faculty Position. A position is available for an individual with general training in biochemistry or a related basic science and specific expertise in protein chemistry. The primary appointment will be in the Department of Medicine at Queen's University, Kingston, Ontario, Canada, and a cross-appointment in the Department of Biochemistry is negotiable for a suitable candidate. The applicant should have at least two years of post-doctoral training in protein structural and physical chemistry. Special consideration will be given to individuals with primary experience in protein-protein and protein-membrane interactions in the generation of complex formations on membrane surfaces. Previous experience in the area of hemostasis research is essential as a major interaction with a developing experimental pathology group in this area will be expected. The applicant should have demonstrated a record of outstanding productivity enabling him or her to be competitive in pursuit of individual research support. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. Funding of the position is contingent on extramural funds being obtained by the successful applicant. Enquiries or applications, together with a resume and the names of three referees, should be sent to: Dr. J. G. Gies, Department of Medicine, Richardson Laboratories, Queen's University, Kingston, Ontario, Canada, K7L 3N6.

**UNIVERSITY OF ALBERTA, Department of Applied Sciences in Medicine.** Research Scholar at an Assistant/Associate Professor (\$27,720-39,820; \$35,420-51,658) level. Applications are invited for a position in a Research Group as Bone Histomorphometrist. The successful candidate must have MD, DDS and/or Ph.D. degree, and post-doctoral research experience in the area of quantitative bone histomorphometry. Preference will be given to investigators who have recently completed training in research and who have demonstrated outstanding potential for an independent research career. The successful candidate will have the responsibility to introduce the method of quantitative histomorphometry into on-going clinical and experimental bone research programs, and to establish a new, independent experimental program. This position will be funded in the long-term through an external agency but the incumbent will enjoy all the privileges of the University academic rank at which the appointment is made. The granting of these awards is by competition, being made on the basis of excellence. Candidates should forward their curriculum vitae, an outline of their research interests and names of three references to: Dr. T.R. Dvorton, Department of Applied Sciences in Medicine, 10-102 Clinical Sciences, University of Alberta, Edmonton, Alberta, T6G 2G3. Closing date 31 December 1982. The University of Alberta is an equal opportunity employer, but in accordance with Canada Employment and Immigration regulations, this advertisement is directed to Canadian citizens and permanent residents.

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| <p><b>UNIVERSITY OF SASKATCHEWAN.</b> College of Medicine. Department of Physiology. Applications are invited for appointment at the Assistant Professor level. The appointment will be non-tenurable but may be continued for three years. Applicants must have a Ph.D., D.S.S., D.V.M. or M.D. degree with post-doctoral experience. Preference will be given to individuals with teaching and research expertise in: (1) Neurophysiology, (2) Gastro-intestinal physiology and/or (3) Renal Physiology. Address inquiries to N.M. McDuffie, Acting Head, Department of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, S7N 0W0. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.</p> <p><b>McMASTER UNIVERSITY.</b> Department of Pediatrics — Genetic Toxicology. Postdoctoral Fellow or Research Associate depending on candidate's experience. Ph.D. with competence in cytogenetics and/or mutation in mammalian cells, to contribute to a research program in human genetic toxicology. The appointment is available January 1, 1983 but applications will be accepted until the position is filled. Salary range is \$17,000 to \$25,000 per annum. A detailed curriculum vitae, academic transcripts and the names of three references should be sent to: Dr. D.J. Tomkins, Department of Pediatrics, McMaster University, Health Science Centre, Hamilton, Ontario, L8N 3Z5.</p> | <p>Hebrew Language and Literature. The candidate must be a specialist in Mediaeval Jewish Philosophy, Mysticism, or Belles-lettres, rather than in intellectual history in general. Ph.D. is required, as is also a publication record adequate to justify appointment to the Graduate School in the near future. Duties will include (a) teaching and directing research in the Graduate School, (b) undergraduate teaching in the area of specialization, and in Modern Hebrew Language. Applications including a curriculum vitae should be sent to The Chairman, Department of Near Eastern Studies, University of Toronto, Toronto, Ontario, M5S 1A1. Applicants should also ask three scholars to send letters, as referees, to the same address and should include their names in the application. It is hoped to begin the process of selection in January, and to make an appointment effective July 1st, 1983. N.B. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.</p> <p><b>UNIVERSITY OF TORONTO.</b> Near Eastern Studies. Assistant Professorship in Near Eastern Studies. This is a tenure-track appointment to be made at an appropriate point on the Assistant Professor scale. Ph.D. preferably with teaching experience. The successful candidate will be a specialist in Egyptian language but will also be expected to teach Egyptian literature and history and should have a background in a related area such as Classics or Semitics. The candidate should have a research and/or publication record sufficient to indicate a rapid progression toward graduate teaching. Applications including a curriculum vitae should be sent to the Chairman, Department of Near Eastern Studies, University of Toronto, Toronto, Ontario, Canada, M5S 1A1. Applicants should arrange to have letters from at least 3 referees sent to the same address. In accordance with Canadian Immigration requirements, this advertisement is directed toward Canadian citizens and permanent residents. Closing date for applications: 31 December 1982. Date of appointment: 1 July 1983.</p> | <p>and Occupational Therapy, McGill University, 3654 Drummond Street, Montreal, P.Q., H3G 1Y5. Only Canadian and Landed Immigrants to Canada need apply for this position.</p>  | <p><b>BROCK UNIVERSITY.</b> School of Physical Education and Recreation. Applications are invited for two positions in the undergraduate program in physical education and recreation. Position 1 — Physical Education. Expertise in Laban's Theory of Movement with particular emphasis on dance, games and educational gymnastics. Position 2 — Recreation: Areas of expertise required: Principles of Play and Leisure; Leisure and Aging; Therapeutic Recreation; Employee Recreation and Recreation Administration. Qualifications: Doctorate preferred, Master's minimum. Salary and Rank: Commensurate with qualifications and experience. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Applications should be received by March 1, 1983. Please forward application and curriculum vitae to: A.C. Lowenberger, Ph.D., Director, School of Physical Education and Recreation, Brock University, St. Catharines, Ontario, L2S 3A1.</p>   |
| <p><b>MUSIC</b></p>   | <p><b>UNIVERSITY OF VICTORIA.</b> Music. Position in Theory. Position: Lecturer or Assistant Professor (commensurate with qualifications). Qualifications: Master's degree required. Previous university teaching experience in Music Theory, Electronic/Computer Music Techniques and Composition desirable. Duties: Undergraduate and possibly graduate theory, electronic and computer music. Ability to contribute to the development of an electronic/computer music facility. Salary: commensurate with education and experience. 1981-82 floor: Lecturer — \$19,360; Assistant Professor — \$24,250. Appointment date: July 1, 1983. Teaching duties begin September 1, 1983. Closing date: January 15, 1983. Curriculum vitae, names of referees, and/or full placement dossier requested with first letter. Apply to: Professor Paul Kling, Director, School of Music, Faculty of Fine Arts, University of Victoria, Victoria, B.C., Canada, V8W 2Y2.</p>  | <p><b>OFFICE ADMINISTRATION</b></p>   | <p><b>UNIVERSITE D'OTTAWA.</b> Ecole des sciences de l'activité physique. L'Ecole des sciences de l'activité physique requiert pour le 1er juillet 1983 un professeur en biomécanique. Le candidat doit détenir un doctorat et avoir fait ses preuves en recherche. Sa tâche se répartira comme suit: enseignement aux 1er et 2e cycles; direction de et collaboration aux travaux de recherche dans leur domaine; participation à l'administration de l'unité; le bilinguisme serait un atout. Les candidats selon qualifications et expérience. Possibilité d'obtenir éventuellement la permanence. Prière de faire parvenir son curriculum vitae ainsi que le nom de trois répondants à l'adresse suivante avant le 31 décembre 1982: Dr. Charles Colton, Directeur, Ecole des sciences de l'activité physique, Université d'Ottawa, 35, rue MacDougall, Ottawa (Ontario) K1N 6N5.</p>  |
| <p><b>NATIVE AMERICAN STUDIES</b></p>   | <p><b>OCCUPATIONAL THERAPY</b></p>  | <p><b>MOUNT SAINT VINCENT UNIVERSITY.</b> Office Administration. Mount Saint Vincent University, Department of Office Administration, invites applications for a position in office administration and secretarial studies. The appointee will be expected to teach undergraduate courses in one or more of the following: communications, word/data processing, records management, and other related studies. Qualifications: Master's degree in business education with undergraduate courses in secretarial studies. Preference will be given to applicants with experience in word/data processing. Rank and salary in accordance with qualifications and experience. The position will commence July 1983. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Send curriculum vitae and the names of three referees to: Dr. Susan Clark, Dean, Human and Professional Development, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6.</p>   | <p><b>PHYSICS</b></p>  |
| <p><b>THE UNIVERSITY OF LETHBRIDGE.</b> Department of Native American Studies. 1. One position at the Lecturer or Assistant Professor level. The successful candidate will teach and do research dealing with native studies. In accordance with Canadian Immigration regulations, this advertisement is directed to Canadian citizens and permanent residents of Canada. 2. Ph.D. at or near completion in Native American Studies. Extensive experience in, and understanding of, native politics at the band level, native organizations and the practical problems associated with native people's interaction with governments at both the federal and provincial levels may be considered in lieu of academic credentials. 3. Previous teaching experience is an asset. Salary: min/max. Lecturer — \$21,688 (1982-83); Assistant Professor — \$27,230 (1982-83). 5. Applicants should send a curriculum vitae and names and addresses of three referees to: Mrs. H.C. Morris, Chairman, Department of Native American Studies, The University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M4. 6. Term of tenure-track position effective July 1, 1983. 7. Closing date: February 1, 1983.</p>  | <p><b>DALHOUSIE UNIVERSITY.</b> Occupational Therapy. Dalhousie University, School of Occupational Therapy, invites applications for two full-time, tenure-track faculty positions available July 1, 1983. Doctoral preparation, with a minimum of three years clinical experience in occupational therapy, along with teaching and research experience is preferred. Candidates close to finishing doctoral studies or with Master's degree will be considered. Specialties required include pediatrics, neurophysiology, biomechanics, mental health and community practice. Other areas of specialty will also be considered. Responsibilities include undergraduate teaching of generic and specialty related aspects of occupational therapy, research and administrative functions. These positions provide an opportunity to participate in the development of a new bachelor of science curriculum designed to serve the four Atlantic provinces. The first students were enrolled in September 1982. Salary and rank will be commensurate with qualifications and experience. In accordance with Canadian Immigration requirements, Canadian citizens and permanent residents will be given preference. Applications will be accepted until January 15, 1983, or until positions are filled. Send letter of application, curriculum vitae, and the name and address of three referees to: Prof. Barbara A. O'Shea, Associate Professor and Director, School of Occupational Therapy, 10th Floor, Tupper Building, Faculty of Health Professions, Dalhousie University, Halifax, Nova Scotia, B3H 4H7.</p>  | <p><b>PHILOSOPHY</b></p>  | <p><b>THE UNIVERSITY OF ALBERTA.</b> Physics. Research Associate. Qualifications: A research associate experimentalist whose background and/or interests would relate to research with the 200 - 500 MeV TRIUMF cyclotron or to neutron interactions at the CN 7.5 MeV van de Graaff. Salary: Salary will be in the \$21,000 per annum range depending on qualifications. A range of benefits package including group life, disability, health and dental insurance is available. The successful candidate will be eligible for a travel allowance and may be given the opportunity to participate in teaching. Employment date: The appointment will be for one year. The appointment may be extended depending on availability of funds and by mutual agreement. Starting date is flexible. Application: Interested candidates should submit a curriculum vitae, including the names of three (3) referees, by January 31, 1983, to: Research Associate Search Committee, Nuclear Research Centre, The University of Alberta, Edmonton, Alberta, T6G 2N5. Telephone: (403) 432-3637. The University is an equal opportunity employer but, in accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.</p> |
| <p><b>NEAR EASTERN STUDIES</b></p>  | <p><b>PHYSICAL EDUCATION/SCIENCES DE L'ACTIVITE PHYSIQUE</b></p>  | <p><b>UNIVERSITY OF TORONTO.</b> Philosophy. Assistant Professorship in Philosophy. This is a tenure-track appointment to be made at an appropriate point on the Assistant Professor scale. Ph.D. preferably with teaching experience. Primary specialization in Ancient Philosophy with expertise in Aristotle. Competence in areas of secondary specialization will also be taken into account. The candidate should have a research and/or publication record sufficient to justify an early appointment to teach at the academic level. Candidates should send curriculum vitae, the names and addresses of three referees to: Professor Frank Cunningham, Chairman, Department of Philosophy, University of Toronto, Toronto, Ontario, Canada, M5S 1A1. In accordance with Canadian Immigration requirements, this advertisement is directed toward Canadian citizens and permanent residents. Closing date for application: 31 December 1982. Date of appointment: 1 July 1983.</p> <p><b>McGILL UNIVERSITY.</b> Department of Philosophy. Possible appointment as Visiting Assistant Professor for 9 months beginning September 1, 1983. \$22,500.00. Excellence more important than particular areas. Candidates must be able to teach Introductory Logic. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Existing files of earlier eligible applicants will be considered. Send curriculum vitae and names of three referees to: Professor Alastair McKinnon, Chairman, Department of Philosophy, Brimfam Bldg., McGill University, 1001 Sherbrooke St. W., Montreal, Quebec, H3C 3G1.</p> <p><b>UNIVERSITY OF TORONTO. SCARBOROUGH COLLEGE.</b> Philosophy. Applications are invited for a tenure-track position, commencing 1 July 1983, at the Assistant Professor level. Specialization in Philosophy of Science including expertise in Philosophy of Biology and Biomedical Ethics. Salary commensurate with qualifications. Ph.D. and evidence of excellence in teaching and research are required. Closing date for receipt of applications is 31 December 1982. Candidates should send curriculum vitae and three letters of reference and evidence of teaching ability to: Professor Wayne Dowler, Chairman, Division of Humanities, Scarborough College, University of Toronto, 1265 Military Trail, West Hill, Ontario, M1C 1A4. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.</p> | <p><b>PHYSICS</b></p>  |
| <p><b>NEAR EASTERN STUDIES</b></p>  | <p><b>PHYSICAL EDUCATION/SCIENCES DE L'ACTIVITE PHYSIQUE</b></p>  | <p><b>UNIVERSITY OF WATERLOO.</b> Physics. Postdoctoral Fellowships. The Department of Physics is offering several postdoctoral fellowships for research work in the areas of experimental and theoretical solid state physics, biophysics, atomic and molecular physics, surface physics and particle physics and storage. The fellowships are for a period of 1 year and are renewable for a second year by mutual agreement. Some teaching duties may be arranged. A brochure outlining current research programs will be sent on request. Applicants should send a resume and the names of 3 referees to: Prof. F.W. Boswell, Department of Physics, University of Waterloo, Waterloo, Ontario, Canada, N2L 3G1. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.</p>   | <p><b>PHYSICS</b></p>  |
| <p><b>NEAR EASTERN STUDIES</b></p>  | <p><b>PHYSICAL EDUCATION/SCIENCES DE L'ACTIVITE PHYSIQUE</b></p>  | <p><b>PHYSICAL EDUCATION/SCIENCES DE L'ACTIVITE PHYSIQUE</b></p>  | <p><b>POLITICAL SCIENCE</b></p>  |
| <p><b>THE UNIVERSITY OF TORONTO.</b> Near Eastern Studies. The Department of Near Eastern Studies expects (budget permitting) to appoint an Assistant Professor, tenure stream, in Mediaeval and Modern</p>   | <p><b>PHYSICAL EDUCATION/SCIENCES DE L'ACTIVITE PHYSIQUE</b></p>  | <p><b>PHYSICAL EDUCATION/SCIENCES DE L'ACTIVITE PHYSIQUE</b></p>  | <p><b>BISHOP'S UNIVERSITY.</b> Political Science. Applications are invited for one full-time tenure stream position at the Assistant or</p>  |

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ment residents. Please send curriculum vitae with names of three referees to: Dr. R. Perez-Marrero, Department of Urology, Queen's University, Kingston, Ontario, K7L 2V6.

## VETERINARY MEDICINE

**UNIVERSITY OF GUELPH.** Department of Veterinary Microbiology and Immunology. A faculty vacancy in the area of veterinary bacteriology in the Department of Veterinary Microbiology and Immunology, University of Guelph, is anticipated on September 1, 1983. The duties include undergraduate teaching in the D.V.M. and B.Sc. programs, and at the graduate level, including the supervision of candidates for higher degrees, together with participation in the Department's research program on economically important diseases of food animals. Current major research projects relate to enteric and respiratory infections of cattle, swine and horses, and bovine mastitis. Applicants should have the DVM degree and a Ph.D. in veterinary bacteriology. Postdoctoral teaching and research experience in veterinary bacteriology would be an advantage, as would an interest and experience in bovine mastitis. Applicants lacking the DVM degree must have extensive postdoctoral experience in veterinary bacteriology, including bovine mastitis. The salary for this position, which is subject to final budgetary approval, is negotiable. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada. Enquiries and applications should be directed to Dr. J.B. Derbyshire, Chairman, Department of Veterinary Microbiology and Immunology, University of Guelph, Guelph, Ontario, N1G 2W1.

**UNIVERSITY OF SASKATCHEWAN.** Veterinary Pathology Department of Veterinary Pathology, Western College of Veterinary Medicine, Saskatoon, requires an Assistant/Associate Professor in Veterinary Clinical Pathology effective July 1, 1983. Responsibilities include teaching classes in the undergraduate and graduate curricula with particular emphasis on clinical chemistry and hematology. Familiarity with various chemical tests and their application in the practice of veterinary medicine, equipment and development work in this area is essential. Sharing in a heavy service load in the laboratory is expected. This is a tenureable position. Applicants must have a D.V.M. degree or equivalent and the successful applicant must upon appointment, become a member of the Saskatchewan Veterinary Medical Association. An advanced degree, preferably the Ph.D., and a C.V.P. Board Certification are essential. Rank and salary are commensurate with training and experience. Salary range (1981-82) for Assistant Professor is \$24,078 to \$31,326; for Associate Professor \$31,326 to \$40,412. Salary for 1982-83 under negotiation. Reply: send curriculum vitae plus names of 3 references to Dr. J.H.L. Mills, Department of Veterinary Pathology, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

**UNIVERSITY OF SASKATCHEWAN, WESTERN COLLEGE OF VETERINARY MEDICINE.** Department of Veterinary Pathology. Instructor required July 1, 1983 to June 30, 1984 to assist in laboratory instruction in clinical pathology for 3rd and 4th years, as well as a heavy service component. The D.V.M. degree or equivalent is essential and, upon appointment the successful applicant must become a member of the Saskatchewan Veterinary Medical Association. Salary range (1981-82) is \$17,763 to \$22,851 (under review for 1982-83); the position to be filled when a suitable candidate is found. Reply: send curriculum vitae plus names of 3 references to Dr. J.H.L. Mills, Department of Veterinary Pathology, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

## VISUAL ARTS

**SIMON FRASER UNIVERSITY.** Centre for the Arts. Visual Art Position. The Centre for the Arts expects to make a full-time faculty appointment in Visual Art to begin

September 1983. Primary duties of the position are to teach studio courses from the introductory to the advanced level. Candidates should have broad professional experience in any of the contemporary art forms. A knowledge of historical and theoretical issues in contemporary art and the ability to integrate this with studio teaching is an essential requirement. The appointment will be made at the rank of assistant professor. The successful candidate should be an active artist with a substantial exhibition record. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Letters of application, curriculum vitae, and the names of three referees should be received by February 28, 1983, and should be sent to Professor Grant North, Director, Centre for the Arts, Simon Fraser University, Burnaby, B.C., Canada, V5A 1S6. This appointment is contingent on funding.

## FACULTY EXCHANGE CENTRE

**THE FACULTY EXCHANGE CENTRE,** non-profit, faculty-administered, helps arrange teaching and/or housing exchanges within North America and overseas. For details send self-addressed envelope and two postal coupons to 952 Virginia Avenue, Lancaster, Pennsylvania, U.S.A., 17603.

## LATE ADS

**UNIVERSITY OF OTTAWA, Psychology.** The School of Psychology of the University of Ottawa expects to have several openings to fill for July 1st, 1983. These would be permanent tenure-track positions probably at the Assistant or Associate Professor level. The principal needs are for professors, fluent in French and in English in the areas of child clinical and the humanities (personality, social). Minimum qualifications are: doctorate in Psychology; research experience or potential for research development and knowledge and competency in French and English. Salary range for the current academic year is: maximum: \$67,216 (Assistant Professor minimum: \$24,517; Associate Professor minimum: \$31,535). Applications should be received before February 1, 1983. Submit a letter of application, vita, names and addresses of three references and two recent publications from refereed journals or visible evidence of scholarly publication to: Dr. Joseph Dekoninck, Director, School of Psychology, University of Ottawa, Ottawa, Ontario, Canada, K1N 6N5. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF OTTAWA, Psychologie.** L'Ecole de psychologie prévoit avoir quelques postes vacants de professeurs à combler pour le 1er juillet 1983. Ces postes seront probablement des postes réguliers au niveau de professeur adjoint ou agrégé. Les besoins principaux sont en psychologie clinique de l'enfant et en humanités (personnalité, psychologie sociale). Les qualifications minimums sont: le doctorat en psychologie, de l'expérience (ou un très bon potentiel) en recherche et une bonne maîtrise du français et de l'anglais. L'échelle de salaire de l'année en cours est: maximum \$67,216; professeur adjoint minimum: \$24,517; professeur agrégé minimum \$31,535. Les candidatures devraient être soumises avant le 1er février 1983. Adresser une lettre accompagnée d'un curriculum vitae, du nom des trois références et de l'adresse de trois répondants, ainsi que de tirés à part de deux publications récentes ou de tout autre document constituant une contribution académique au: Dr. Joseph Dekoninck, Ecole de psychologie, Université d'Ottawa, Ottawa, Ontario, Canada, K1N 6N5. Conformément aux règlements de l'immigration canadienne, cet annonce s'adresse aux citoyens canadiens et aux immigrants récus.

**UNIVERSITY OF NEW BRUNSWICK, Forestry.** The Department of Forest Engineering, which is the joint responsibility of the Faculties of Engineering and Forestry, invites applications from civil, forest and mechanical engineers for tenure track positions at the Assistant Professor or Associate Professor level commencing 1983 01 01. Fields: 1. Soil structures and

transportation of forest products. 2. Wooden structures and processing of wood. Duties include: undergraduate and graduate teaching, supervision of graduate students, and a strong commitment to research. Candidates should have a Ph.D. in a related field or equivalent research and industrial experience, and should be eligible for registration as a professional engineer. Applications, including a curriculum vitae and names and addresses of three referees, should be submitted to: The Dean, Faculty of Forestry, University of New Brunswick, Fredericton, N.B., E3B 6C2. In accordance with Canadian immigration requirements this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF TORONTO, Faculty of Social Work.** The University of Toronto, Faculty of Social Work requires a Visiting Lecturer as a replacement for one year. Responsibilities will include teaching (primarily community practice, cross-cultural issues in social work and social work research); educational counselling and field liaison. A doctorate or ABD and teaching experience in the above areas are required. Preference will be given to applicants having experience and interest in social work in health care. Effective date of appointment is July 1/83. Send curriculum vitae and names of three referees to: Acting Dean Winnifred Herington, Faculty of Social Work, University of Toronto, 246 Bloor Street West, Toronto, Ontario, M5S 1A1, no later than December 31, 1982.

**CONCORDIA UNIVERSITY, Department of Mechanical Engineering.** The Department of Mechanical Engineering at Concordia University is seeking applications for two full-time tenure-track faculty positions to start immediately. The Department offers B. Eng., M. Eng., and Ph.D. programs and has a well-established faculty research activity. Applicants should have a Ph.D. with a high promise of excellence in teaching and proven ability to conduct significant independent research. The areas of specialization required for the two positions are respectively: 1) fluid power and controls, automation, and system dynamics with working knowledge of microprocessor applications; 2) computer-aided design and manufacturing, machine intelligence, robotics with relevance to industrial engineering, and applications using interactive graphic facility. The successful candidates will be expected to seek external funding for research, demonstrate scholarly productivity through publications, and develop fruitful contacts with industry. Salaries will be commensurate with qualifications and experience. Applications, including detailed curriculum vitae and names of three referees, should be sent to Dr. T.S. Sankar, Chairman, Department of Mechanical Engineering, Concordia University, 1455 de Maisonneuve Blvd. West, Montreal, Quebec, H3G 1M8. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.

**McGILL UNIVERSITY, Department of Political Science.** Pending budgetary approval, applications are invited for the following seasonal (September 1, 1983-April 30, 1984), or part-time, non-tenure track, replacement appointments at the junior level. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. 1) Comparative politics/Canadian politics and government; to teach an introductory course in comparative politics and 2 or 3 other courses in the area of Canadian politics at the undergraduate and graduate levels. 2) International Politics: to teach an introductory course in international politics and 3 or 4 other undergraduate courses in the field of international politics and foreign policy. Salaries will be negotiated pending budgetary authorization and qualifications. Deadline for applications is February 1, 1983. Applications, including 3 letters of reference, to be forwarded to: Professor F.A. Kunz, Chairman, Department of Political Science, McGill University, Montreal, Quebec, H3A 2T7.

**UNIVERSITY OF GUELPH, Department of Chemistry.** Postdoctoral Fellow or Research Associate for Research in Solar Energy Conversion: Beginning January 1, 1983 or later. Duties involve characterization of single crystal semiconductors coating a variety of organometallic compounds that have been deposited electrochemically. Experience in electrochemistry is desirable. Send resumé and names of two references to Dr. M. Cocivera, Department of Chemistry, University of

Guelph, Guelph, Ontario, N1G 2W1.

**TECHNICAL UNIVERSITY OF NOVA SCOTIA, School of Computer Science.** Applications are invited for tenure track positions of Assistant or Associate Professor. Applicants should have a Ph.D. or equivalent, or near completion, in appropriate area of specialization. Preference will be given to candidates whose area of specialization prepares them to contribute to ongoing research programs in computer organization of small systems, data base machines, intelligent interfaces and distributed processing for information retrieval, or computer graphics. The School offers the final two years of a 4-year program leading to the degree of Bachelor of Computer Science, and is also oriented toward graduate programs. Duties will include teaching, research, and graduate supervision. Salary is dependent on teaching and research experience. Applicants should send curriculum vitae and names of three referees to Professor H.S. Heaps, Director, School of Computer Science, Technical University of Nova Scotia, P.O. Box 1000, Halifax, N.S., B3J 2X4.

**McGILL UNIVERSITY, Islamic Studies.** Applications are invited for a 3-year appointment, beginning September 1, 1983 as Assistant Professor in Islamic thought, with specialization in Islamic philosophy and theology. In addition to teaching and research at McGill, the appointee will spend eight weeks at the Institut of Islamic Studies in London. The Ph.D. should be completed or near completion. Salary according to McGill scale. Send curriculum vitae and three letters of reference to Director, Institute of Islamic Studies, McGill University, 855 Sherbrooke St. West, Montreal, P.Q. H3A 2T7. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**BROCK UNIVERSITY, School of Administrative Studies.** Applications are invited for faculty positions in the rapidly growing School of Administrative Studies in the following areas: Management, Production, Marketing, Finance, and Labour Relations. A Ph.D., a Ph.D. in progress, or the equivalent is preferred. Salary and rank will be commensurate with qualifications and experience. An application, including curriculum vitae and the names of three referees, should be submitted to: J.R. Hanrahan, Director, School of Administrative Studies, Brock University, St. Catharines, Ontario, L2S 3A1.

**BROCK UNIVERSITY, School of Administrative Studies.** Applications are invited for faculty positions teaching some combination of accounting, auditing and taxation in an expanding School which includes an accounting co-op program that is now in its third year. A Ph.D., a Ph.D. in progress, or the equivalent is preferred. Salary and rank will be commensurate with qualifications and experience. An application, including a curriculum vitae and the names of three referees, should be submitted to Prof. J.R. Hanrahan, Director, School of Administrative Studies, Brock University, St. Catharines, Ontario, L2S 3A1.

**QUEEN'S UNIVERSITY, Philosophy Department.** 1. Assistant Professor. The appointment is for one year in the first instance but may be renewed for a second year, for a two year maximum. 2. Ph.D. required. 3. Specialization in philosophy of the social sciences and social and political philosophy. 4. Salary commensurate with qualifications. 5. Send transcripts, curriculum vitae, and three letters of reference to Professor A.P. Fell, Chairman, Department of Philosophy, Queen's University, Kingston, Ontario, Canada, K7L 3N6. 6. Appointment to begin in July, 1983. 7. Closing date for receipt of applications is February 1, 1983. Candidates of both sexes are equally encouraged to apply. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF GUELPH, Ontario Agricultural College.** Chairmen, Department of Land Resource Science. Applications are invited for the position of Chairman, Department of Land Resource Science at the University of Guelph; the position is available July 1, 1983. The Department of Land Resource Science is one of nine administrative units in the Ontario Agricultural College, having a close working relationship with these, as well as other related departments of the Department of Geography, and the School of Rural Planning and Development. The Department is made up of 20 faculty and 28 staff members. The Department ad-

ministers undergraduate programs in Earth Science, Soil Science, and Resource Management, graduate programs in Agrometeorology and Soil Science and a large and diverse research program. The successful applicant will have background and experience in either Soil Science, Agrometeorology, or in a closely related field, and will have demonstrated qualities of leadership in a multidisciplinary context. Experience in teaching, research and administration is desirable. The closing date for applications is January 15, 1983. Applications should include a curriculum vitae and the names and addresses of three persons who may be contacted for reference. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Enquiries and applications, which will be treated in confidence, should be addressed to: Clayton M. Switzer, Dean, Ontario Agricultural College, University of Guelph, Guelph, Ontario, N1G 2W1. Position subject to final budgetary approval.

**QUEEN'S UNIVERSITY.** Department of Psychiatry/Beechgrove Regional Children's Centre, Kingston. A geographic full time faculty position is available at the level of Lecturer/Assistant Professor, depending upon qualifications and experience. Fellowship in the Royal College of Physicians (Canada) in psychiatry or the equivalent is necessary. The academic position is associated with the teaching and research program of the Department, principally in the Division of Child Psychiatry. The clinical appointment is in the Adolescent Service at Beechgrove Regional Children's Centre. Adequate training and clinical experience in adolescent psychiatry is necessary, and a research interest in the field of adolescent psychiatry, especially in adolescent psychotherapy is desirable. Only Canadians or permanent residents need apply for this position. Please forward application together with curriculum vitae and names of three referees to: Dr. B.J. McConville, Professor and Chairman, Division of Child Psychiatry, Department of Psychiatry, Queen's University, Kingston, Ontario K7G 3K1. Applications close January 15, 1983.

**QUEEN'S UNIVERSITY.** Department of Geography. Two positions, commencing July 1, 1983. Ph.D. required, salary according

to University scale. Applications are invited from those whose teaching and research interest will enhance our programme at the undergraduate and graduate levels. A person is sought who has a strong analytical background in urban and economic geography. Preference will be given to candidates with interests in transportation geography, industrial location, or regional development but candidates with other interests are encouraged to apply. One position is renewable; the second is a one year non-renewable appointment. Department of Employment and Immigration regulations specify that Canadian citizens and landed immigrants will be given preference. Candidates of either sex are encouraged equally to apply. Applications, with full curriculum vitae and the names of three referees should be submitted to: Dr. Brian S. Osborne, Head, Department of Geography, Queen's University, Kingston, Ontario, K7L 3N6.

**MCGILL UNIVERSITY.** Faculty of Arts. Department of Art History. Applications are being accepted for a tenure stream appointment at the level of Assistant Professor in the Department of Art History, commencing in September 1983. This appointment is subject to budgetary approval. Qualifications: Ph.D. in Art History — Teaching experience desirable — Publications an asset — Fluency in French and English. The successful candidate would be required to teach primarily undergraduate courses and graduate seminars in the areas of Modern Art and Canadian Art. He/She will also be expected to participate in additional administrative and academic activities of the Department. Salary: The present (1982-83) Assistant Professor's base salary is \$28,821.00. Send application and complete curriculum vitae to: Dr. Rigas N. Bertos, Chairman, Department of Art History, McGill University, 853 Sherbrooke Street West, Montreal Québec, H3A 2T6, Canada. Candidates should request three (3) referees to send letters or recommendation to this same address. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Deadline: The closing date is January 15th, 1983 or until the position has been filled.

**DALHOUSIE UNIVERSITY.** Department of

Education. Applications are invited for a tenure track position in Adult Education commencing July 1, 1983. The candidate would need a complete or near-complete Ph.D. in the area of Continuing Education, with the skills to provide leadership in both the university and the community. Experience in policy formulation and in adult learning activities would be an asset. Responsibilities would include teaching in the graduate programme, thesis advising and community networking. Salary commensurate with experience. Closing date: January 1, 1983. Send curriculum vitae and names of three referees to Dr. L. Haley, Chairman, Department of Education, Dalhousie University, Halifax, N.S., B3H 3J5. Position depends on availability of funding.

**UNIVERSITY OF NEW BRUNSWICK.** SAINT JOHN CAMPUS. Division of Mathematics, Engineering and Computer Science. Applications are invited for a tenure track position in Computer Science at the Assistant/Associate Professor level. Duties include teaching undergraduate courses and conducting research. Salary commensurate with rank and qualifications. Applicants should send curriculum vitae and names of three referees to Dr. I.R. Cameron, Dean of Faculty, University of New Brunswick, P.O. Box 5050, Saint John, N.B., E2L 4L5. Effective date of appointment is July 1, 1983. Applications close when the position is filled. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

**UNIVERSITY OF BRITISH COLUMBIA.** Ophthalmology. The Department of Ophthalmology of the University of British Columbia is seeking an assistant professor with emphasis on neuro-ophthalmology and ocular electrophysiology. The successful candidate would be appointed as the Director of the Visual Function Assessment Unit of the Vancouver General Hospital. Candidates must have training in neuro-ophthalmology and diagnostic electrophysiology. The appointment will commence on July 1st, 1983. Salary by arrangement. Applications should be made by the end of December, 1982 to Dr. Stephen M. Drance, Professor and Head, Department of Ophthalmology, University of British Columbia,

2577 Willow Street, Vancouver, B.C., V5Z 3N9.

**UNIVERSITY OF ALBERTA.** Microbiology. The Department of Microbiology, University of Alberta, invites applications for a position as Research Scholar at Assistant/Associate Professor (27,000-39,820; 35,420-51,658). The successful candidate must have a Ph.D. and/or M.D. degrees in basic and/or applied microbiology. Preference will be given to investigators who have recently completed post-doctoral training and who have demonstrated potential for an independent research career. The position is dependent upon successful application for a competitive award from an external agency. The incumbent will enjoy the privileges of the University academic rank at which the appointment is made. Applicants should forward their curriculum vitae, outlines of their research interests and names of three references to: Dr. D.W.S. Westlake, Department of Microbiology, University of Alberta, Edmonton, Alberta, T6G 2E9. Closing date March 31, 1983. The University of Alberta is an equal opportunity employer but, in accordance with Canada Employment and Immigration regulations, this advertisement is directed to Canadian citizens and permanent residents.

**BRITISH COLUMBIA CANCER RESEARCH CENTRE.** Medical Biophysics Unit. Radiation Biologist/Biophysicist. Applications are invited for a staff appointment in the Medical Biophysics Unit of The British Columbia Cancer Research Centre in Vancouver. The position requires training (Ph.D. or equivalent) and experience in the effects of ionizing radiation in mammalian systems, particularly at the cellular and molecular levels. The appointment can be made at the Assistant, Associate, or Full Professor level. Qualified individuals will be eligible for a university faculty appointment. Some teaching and supervision of graduate students required. The position is available from January 1, 1983; salary commensurate with qualifications. C.V., list of publications and names of three referees should be sent to Dr. L.D. Skarsgard, Head, Medical Biophysics Unit, B.C. Cancer Research Centre, 601 West 10th Avenue, Vancouver, B.C., V5Z 1L3 (phone 604-673-8401), from whom also further details can be obtained.

## Dalhousie University

Halifax, Nova Scotia, Canada

# Department of Mathematics, Statistics and Computing Science

Applications are invited for the newly created position of Director of the division of Computing Science within the Department. This position is to be filled as soon as possible.

The department has quite recently established an Under-graduate programme at both the general degree and Honours degree level. Students may study for the Honours degree in the Co-operative Education programme. There is also a Bachelor of Computing Science programme offered in conjunction with the Technical University of Nova Scotia. The department has a VAX 11/750 which runs under UNIX. The University Computer Centre has a CYBER 720 and has plans for buying micro computers to service the first year students.

Candidates should have demonstrated research and teaching abilities commensurate with a senior academic rank, have a broad background in Computing Science and be able to exercise administrative leadership.

Applicants should send a curriculum vitae and the names of at least three referees to:



Dr. A.C. Thompson  
Chairman  
Mathematics, Statistics and  
Computing Science  
Dalhousie University  
Halifax, Nova Scotia B3H 4H8



## UNIVERSITE DE MONCTON CENTRE UNIVERSITAIRE DE MONCTON

L'Université sollicite des candidatures de

Directeur de l'Ecole de  
nutrition et d'études familiales

### SITUATION

L'Ecole de nutrition et d'études familiales compte plus de 60 étudiants à temps plein. Elle offre également des cours aux étudiants à temps partiel à l'éducation permanente. Son enseignement du niveau de cycle colle avec les domaines suivants: nutrition (programme accrédité par l'Association canadienne de diététologie, économie familiale et enseignement en économie familiale. L'Ecole offre aussi un programme de maîtrise, avec des concentrations en organisation et vie familiale, en alimentation et nutrition et en textiles et vêtements.

### FONCTIONS

Les professeurs sont actifs en recherche dans les domaines suivants: vêtements, textiles, nutrition et alimentation. Ils sont aussi engagés dans des projets de coopération internationale avec le Nicaragua et le Sénégal, par exemple.

Sous l'autorité du Vice-recteur à l'enseignement et à la recherche, le directeur est responsable du fonctionnement de l'Ecole. Président du Conseil de l'Ecole, il dirige le personnel enseignant, veille à l'établissement des priorités en tenant compte des implications budgétaires, analyse et fait connaître les besoins de l'Ecole, favorise au maintien des normes académiques, coordonne les activités d'enseignement et de recherche des professeurs, etc. Il représente l'Ecole au Sénat académique ainsi que sur un nombre de comités de l'Université.

### QUALIFICATIONS

Les candidats doivent être détenteurs d'un Ph.D. (ou d'un diplôme équivalent) dans l'un des domaines de l'Ecole ou dans une discipline connexe. De préférence, ils devaient aussi avoir prouvé d'expérience dans l'enseignement universitaire, d'intérêt pour le travail de recherche et, si possible, d'une certaine expérience administrative. Les candidats doivent maîtriser la langue française tant orale qu'écrite.

### DATE D'ENTREE EN FONCTION.

Le 1er juillet 1983. Les candidatures seront étudiées à compter du 15 janvier 1983. Le poste dont il est question dans cette annonce est offert aussi bien aux femmes qu'aux hommes. Les personnes intéressées sont priées de faire parvenir un curriculum vitae détaillé et un dossier professionnel complété avec le nom de trois répondants au:

Vice-recteur à l'enseignement et à la recherche  
Université de Moncton  
Moncton, Nouveau-Brunswick  
E1A 3E9

(Conformément aux exigences relatives à l'immigration au Canada, ce poste est offert aux citoyens canadiens et aux résidents permanents seulement)

# ECONOMIC BENEFITS. AVANTAGES ECONOMIQUES

## Wage control and the universities: part II

by Richard Bellaire

Since my October column on federal and provincial government wage restraint programmes, a number of additional provinces have introduced, or threatened to introduce, programmes.

### Ontario

The programme covering the largest number of faculty is Ontario's Bill 179. On September 21 the Progressive Conservative government introduced a bill respecting wages and collective bargaining in the public sector of Ontario, as well as a price monitoring system for government "administered" prices. The bill has not yet been passed and has been referred to a standing committee for hearings. There is a possibility that the bill will be modified. The provisions outlined in this article are based on the legislation as presented to the provincial legislature.

The bill establishes an Inflation Restraint Board with at least three members, to be chaired by Jack Biddell, the former chairman of Clarkson, Gordon and Ontario's commissioner on the 1975 federal anti-inflation Board. The Board may hold hearings but is not required to, nor is the Board required to provide explanations for its actions or decisions.

The bill covers all public employees including hospital employees, public and high school employees, municipal employees and, of course, university employees. Each group will have to spend at least one year in the control system, but when it enters and when it leaves the year depends on when the

group's collective agreement expires (expired). If there is no collective agreement, the determination is based on the normal anniversary date when pay increases are granted.

For most faculty associations, when the collective agreement expires between October 1, 1982 and October 1, 1983, it will be extended (as is) for 12 months and the compensation will be increased by 5 percent. If the association's agreement runs until after October 1, 1982 — a multi-year agreement then on the anniversary date the increase for the next 12 months will be 5 percent and not what is stated in the agreement. For those associations whose agreements had expired and who had not renegotiated renewals by September 21 there is a transition phase.

Compensation under the bill includes all forms of payment benefits and perquisites given directly or indirectly for duties performed. There is obviously a very important question for the faculty — the position of the progress-through-the-ranks system. Under section 12(5), no increase in compensation for or in recognition of a meritorious or satisfactory work performance or completion of a specified period of work experience is possible after Sept. 21 if the payment of this would bring a person above an annual compensation of \$35,000. This would not apply to an increase that is the result of a promotion, provided the promotion was based on the normal system of promotion in existence before September 21.

Strikes are not explicitly banned by the

bill, but under the Ontario Labour Relations Act strikes or lockouts are prohibited during the term of an agreement. Since agreements are extended at least 12 months by the bill, the no-strike and no-lockout provisions are in force.

The bill allows for "negotiations" over non-monetary matters and over monetary matters provided the compensation package is within the limits of the legislation. But both parties must agree to any change, and if the change involves a change to the compensation package, the Inflation Review Board must agree that the change is within the limits.

The Board can ask the Cabinet to exempt a group and/or individual from the terms of the act.

### Nova Scotia

Premier John Buchanan announced a policy of wage restraint on September 24 which called for wage and benefit increases for all employees of government, provincial crown corporations and boards, commissions and agencies to be held to an average of 6 percent for a one-year period. In the view of NSCUFA, there is no legal authority for making any such programme mandatory and the programme amounts to no more than a declaration of intention.

Premier Buchanan said there could be negotiations but only on the basis of how the 6 percent will be apportioned among the workers. It would be possible for bargaining units to negotiate increases larger than 6 percent for people at the lower end of the

income scale if the total settlement was under the 6 percent maximum. New agreements will be for one year and must be finalized by February 28, 1983. If they are not in place by that time the government "will take appropriate legislative action."

Many questions were left unanswered by the Premier's statement.

### Saskatchewan

The wage restraint programme in Saskatchewan was announced as part of a multi-step policy for economic recovery. The programme calls for wage increases in the public sector to be held on average to a level at least 1 percent below the current rate of inflation.

These are guidelines and not legislation, but Premier Devine stated that despite flexibility in application, the guidelines for wage increases would be firmly adhered to throughout the entire Saskatchewan public sector, including universities.

Though the norm calls for increases at least 1 percent below inflation, there are variations. Low paid employees may exceed the average increase and high paid employees may be less than the average. Normal service increments, as well as performance increments or bonuses, are not subject to the guidelines and in some cases, incentives related to productivity may not be subject to the guidelines. When there is significant labour shortage in certain jobs and the pay rates for these jobs are not competitive, the pay increase may exceed the increases for the average.



## UNIVERSITE D'OTTAWA

### Directeur, Département de Science Economique

L'Université d'Ottawa est à la recherche d'un directeur du département de Science économique. Le candidat devra avoir les qualifications requises pour une nomination au rang de professeur agrégé ou professeur titulaire (doctorat, expérience de l'enseignement universitaire, chercheur reconnu dans le domaine). Le candidat devra avoir une bonne connaissance du français et de l'anglais. Une expérience administrative pertinente est souhaitable. L'entrée en fonction est prévue pour le 1er juillet 1983. Il sera tenu compte en premier lieu des candidatures des citoyens Canadiens et des Immigrants Reçus.

Les candidatures de pair avec un curriculum vitae à date et le nom de trois (3) répondants doivent être envoyées avant le 31 décembre 1982 à:

W. Badour, Doyen  
Faculté des Sciences sociales  
Université d'Ottawa  
550 Cumberland  
Ottawa, Ontario  
K1N 6N5



## UNIVERSITY OF OTTAWA

### Chairman, Department of Economics

Nominations and applications are sought for the position of Chairman of the Department of Economics. Applications are invited from well qualified candidates at the level of Associate or Full Professor with established credentials in the field of economics. Some administrative experience would be an asset. Candidates must be bilingual. The position will be open July 1st, 1983. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

Applications, curriculum vitae and the names of three referees should be sent to the undersigned before December 31, 1982.

W. Badour, Dean  
Faculty of Social Sciences  
University of Ottawa  
550 Cumberland  
Ottawa, Ontario  
K1N 6N5